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THE INCONSISTENCY OF JEAN PAUL SARTRE'S LOGIC

IF, in view of the public interest which has been centered about the novels and plays of Jean Paul Sartre by a sensational advertising campaign, we ask ourselves what will remain—or, indeed, what remains now—of his apparently subtle and new philosophy, we come to realize that its novelty has grown old very quickly and that existentialist psychoanalysis disintegrates thought more than it promotes or enriches it. In order for an idea to retain the attention of the public, it must be new in a much clearer and more real sense. Moreover, critiques have been written that are considerably subtler than those found in the analyses and audacities of works that are subtly paralogical. It would be interesting to gather together these studies that negate the most positive assertions of a writer whose logic ends up by destroying itself.

An excellent example of this form of critique is the argument of Pierre Ayraud in his *Réflexions sur l'Etre et le Néant*, one of

the essays in *Témoignages* (Cahiers de la Pierre-qui-Vire, August 1946). This study begins as follows: " A reading of *l'Etre et le Néant* makes one wonder if it is really necessary to refute Sartre. He has organised his system in such a fashion that acceptance of the initial premises of the book leads, little by little, to acceptance of the whole book. To the rejections of these premises the author will certainly object that it is unfair to criticize his philosophy on the basis of principles other than his own. Besides, Sartre is a subtle thinker, indeed, too subtle. Armed with his existentialist psychoanalysis, he quickly destroys his opponent's thought, reducing it to that game of mirrors in which the " pour soi " [1] triumphs only to perish more completely. It has to be said: A philosopher who considers serious-mindedness the supreme illusion of human consciousness is *a priori* not even worthy of criticism. Therefore, we shall not try to find out whether Sartre is right or wrong, whether he is a charlatan of genius or a poor fellow caught in the trap of his own dialectics. We shall try only to prove that his philosophy constitutes no threat whatsoever to our own basic theses. More than that, realism correctly understood permits us to perceive more clearly the hidden flaws in this phenomenological ontology that is neither ontological nor phenomenological.

How explain the fact that Sartrian existentialism, expressing itself in a whole series of morbid literary works, was born and developed in the land of Descartes, although part of it came to France " in the baggage train of foreigners? " Is it simply a reaction against the rationalistic and idealistic trends which too long dominated philosophical thought in the nineteenth and at the beginning of the twentieth century, cutting that thought off from reality and life and making it sterile? Must we not recognize that this noisy explosion of existentialism has emotional roots and arose out of the frightful cataclysm of world war?

[1] Sartre recognizes two kinds of being, "*l'être pour-soi*" and "*l'être en-soi.*" The latter is the thick " viscous " impenetrable being of inanimate things and of man's past. The former is man's present being in which consciousness, " nothingness," and " choice " play the major role.

Certainly, philosophy must raise the question of the meaning of human existence, and all reflection should take into account the destiny of man himself. Philosophy is not only a scheme of ideas; it is the establishment of a position with regard to the Absolute and each one of us, at every moment, irrevocably stakes infinite values. But we must not allow the abuse of deadening abstractions to throw us into the sticky subjectivity of the hard existent, as the exaggerated systematization of Hegel drove Kierkegaard to clench his fists in a fideism of despair. Philosophy, which is an understanding of reality, is not based upon the particular, sunk or " stuck " in itself, nor upon bloodless generalities. When, with regard to action's internal springs, I try to describe the interlocking links of action, I never do it as if analysis were sufficient of itself, or as if description could be gratuitous. There are over-all structures, supra-individual standards, organic wholes, and intelligible syntheses. In short, there are regulative and judicative truths without which we would not realize that physical being constantly becomes stickier, like a homogeneous mass, nor that consciousness expands like a fullness overflowing, nor, above all, that the two oppose each other, either painfully to prolong their separation, or to project themselves, discovering in the unexpectedness of this leap forward the very essence of freedom from any value. If phenomenology continues to develop contradictory dialectics, it is because the modern phenomenologists have revived the divorce between the individual and the universal. They start by making sacrosanct one point of perspective, chosen arbitrarily, and then try to bring all the facets and values of existence into this perspective, cost what it may. This is the worst of all abstractions: to seek to reduce to an identical norm—arbitrarily conceived—the diverse reactions and needs of human beings which can be integrated only in a hierarchy of principles and values. If Sartrianism is only true for M. Sartre, we may say that it is no longer true, even for him; truth and universality are one.

Once the initial perspective is distorted, the vision of the whole remains disturbed. What are these notions of " facti-

tiousness," " utility," " existential choice," and even, of equivocal " transcendence? " The simple statement of a " pure " fact is unintelligible; the most elementary fact is always in some degree elaborated so that the penetration of the object by the subject began long before anyone declared that it was impossible. Similarly, what clear-cut idea are we to understand when the existentialists, in the mode of pragmatism, speak of the artificiality of the world? This notion turns back upon its creators to prove to them that, if the world is relative to their ability to construct it, far from being enslaved by " mundaneness," they can dominate " mundaneness " by the absoluteness of the spirit. As for the idea of " pure choice," identified with the blind existential urge, it means only an obscure tendency, radically biological, with utilitarian or hedonistic fruits. If no coherent science can be worked out concerning existence, and freedom is conceived without an inwardness that is both demanding and sanctioning, not only does all metaphysics or morality become impossible, but all reason becomes impossible too. Finally, what shall we say of the caricature of transcendence that is offered us to designate in turn the exterior position of the existent with regard to himself, his primacy over nothingness, his very precarious control of the world and his anomite-like " project " within an illusory freedom. Nowhere is the authentic transcendence of the immanent and demanding Absolute discussed. And, fundamentally, it is logical that this system which has brought the mind down to the level of the irrational should bring transcendence down to the level of the unreal.

From existentialism in the best sense of the word, the idea to be retained is that a practical and militant philosophy is necessary, since in the question: " What is being? " I am included and compromised to the point where I can no longer answer objectively without taking a stand for or against my own existence. It has been the goal of all philosophical effort to show that our idea of an act and the act itself are not the same thing and that a proper place in philosophy must be given to that which until now seemed impossible to identify in the ex-

treme diversity of the elusive contingency which attends concrete existences. But what can we retain of the negative existentialism? Its psychoanalytical explorations have revealed as yet unplumbed depths of egoism and perversity in man, rather than treasures of generosity. Can the existentialists be said to have enriched our knowledge of humanity by their contribution of cynical " totalism? " Definitely not, for the truth is always of the spirit. It disintegrates in descriptive complacency and the workings of an unhealthy imagination disturbed by animal cravings. Indeed, I have known this black existentialism so long, that I am eminently entitled to give my opinion of it. As early as 1880, the dilettantism then *à la mode* advocated perverse experimentalism, and pessimism, which was widespread, glorified nothingness. None of this has changed. The modern existentialists do not really wish to solve the problem of existence; they wish to curb our right to raise the real problem. That is why they destroy, *a priori*, any relationship between the subject and the object, between the subject and himself, between the subject and other subject. But whom will they convince that man lives only for this disgusting " mess " and that he dies, if one dare say it, to prove the absurdity of life? Why must the irrational be the favorite food of man's reason, rather than that which transcends it and fulfills it? Doubtless, because reason can juggle with the unreasonable, while it must show itself humble before standards that go beyond it. It is high time that the French spirit and the French mind reaffirmed their rights to universality and inwardness, instead of allowing themselves to be deceived by an overly visceral imagination.

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THE PLACE OF HOLY SCRIPTURE IN THE THEOLOGY OF ST. THOMAS

ACCORDING to Pope Leo XIII, St. Thomas Aquinas was the leading exegete of Holy Scripture among the theologians of the Scholastic age.[1] It may therefore be of interest to study the place the Bible occupies in his works and in his theological system. The nature of theological science has always been much discussed. Even in the time of St. Thomas there were differences of opinion on this subject,[2] and after having rested some centuries, the discussion has been reopened in modern times with more acuteness and more far-reaching consequences than before. The school of St. Thomas has always based its teaching on the explanation of the word " theology "; theology is the knowledge of God, and of created things in so far as they are related to God. The knowledge of God is a double one, natural and supernatural, and so there are today two kinds of theology, natural theology, called theodicy, and theology strictly so called, which is based on revelation.[3] Although essentially one, because God is one, theology has been divided into several sub-divisions. This is due to the ever increasing extension of theological knowledge, as well as to the different angles from which the fact of revelation may be considered.

Revelation may be considered as something whose credibility must be proved and even defined against those who deny it; so originates the initial phase of theological science, called apologetics, or fundamental theology. Revelation, however, may also be considered from a speculative standpoint, in as much as one tries to penetrate it with the aid of speculative human

[1] " Thomas Aquinas inter eos habuit palmam," in the Encyclical, *Providentissimus Deus* (*Enchiridion Biblicum*, no. 81).

[2] *Summa Theol.*, I, q. 1, a. 3. [3] *Ibid.*, a. 1, ad 2um.

science. This gives origin to speculative theology, which tends to be considered by many of its students as the whole of theology; it deals with the truths of faith as they are found in the sources of revelation, and it pursues a threefold aim. First, and principally, the speculative theologian seeks to understand and to penetrate into the terms in which the truths of faith are proposed to him. Secondly, he draws conclusions from the articles of faith with the aid of human knowledge and human reasoning. Thirdly, he has to invalidate the arguments which are brought against the articles of faith by those who consider those articles absurd.

Besides speculative theology there is also what has been called positive theology. This does not try to penetrate the revealed truths, or the terms in which they have been revealed, by speculative thinking; its task is to indicate the revealed truth in its sources, and to explain these sources as far as they are obscure or not fully understood. Holy Scripture is the word of God, not in the sense that it is identical with revelation, but in the sense that it has been inspired by the Holy Ghost and contains revelation. But although it is God's word, " written for our instruction " (*Rom.* xv, 4), " that the man of God may be perfect, prepared unto every good work " (*II Tim.* iii, 17), it is not clear to everyone. The Bible often reminds one of the book with the seven seals of the *Revelation of Saint John.* Often its sense is discovered only with difficulty, and not without the assistance of the Holy Ghost, which may be given to the individual believer, but which is before all given to the Church. The exegete tries to determine the sense of Scripture; he opens the seals of the closed book and tries to make clear what is obscure. In so doing he may use every human means: philology, history, anthropology, sociology, etc., but his work is theological, just as much as it is the work of theology to penetrate into the revealed truth with the aid of profane philosophy. The same must be said, with the proper adjustments, of positive theology which has tradition, considered as a source of revelation, as an object. Besides this, positive the-

ology has a defensive function. It defends Holy Scripture against those who deny its truth. It proves that the articles of faith which are not contained in the Bible, proceed from true divine and apostolic tradition.

In the last seventeen years of his life, from his graduation as a Master of Theology in 1256 until his death in 1273, St. Thomas wrote commentaries on a number of biblical books: *Isaiah*, the *Canticles*, *Lamentations*, *Jeremiah*, *Job*, the *Psalms*, the *Gospel of Matthew*, the *Epistles of St. Paul*, and the *Gospel of St. John*. To these commentaries must be added the *Catena Aurea* or Golden Chain called by St. Thomas himself *Glossae in Quatuor Evangelia*. This is not a commentary written by the saint himself, but one continuous concatenation of texts of the Fathers, which explain the Gospels. Of all these works, only the commentary on the Canticles has not come down to us; the two commentaries on this book ascribed to St. Thomas and found in some editions of his work are now commonly considered to be spurious. The material extent of all these commentaries is as large as that of the *Summa*, and from this point of view they occupy an important place among the theological works of the doctor of the Church.

St. Thomas' commentaries were written, either by his own hand, or by others who wrote them down during his lectures. The commentaries on the most difficult books, those of the Old Testament, were written by himself; most of those on the New Testament were taken down by his disciples. An exception must be made for the commentary on the Psalms and the commentary on the Epistles of St. Paul. It seems that St. Thomas explained the *Psalms* at the same time as he explained *Romans* and *I Cor.* i-x. The *Epistles of St. Paul* were considered more important and more difficult than the *Psalms*; therefore St. Thomas himself wrote the commentary on the above mentioned letters of St. Paul, but had the other ones written by one of his disciples. The *Catena Aurea* is wholly the personal work of St. Thomas.

In many respects the medieval student did not differ from his

modern colleague; taking good dictation and reproducing the words of the professor without mistake was not the accomplishment of every student. To take down his orally delivered commentaries, St. Thomas always chose someone whom he thought to be most capable of the work. During his first stay in Paris, those thus elected were a certain Peter of Andria, a Dominican, and a secular cleric whose name is unknown. From 1259 until his death, his confrère, Reinald of Piperno, who edited the spiritual heritage of the Master, functioned as his secretary. A commentary written by the professor himself was called *expositio*; one taken down by a disciple was given the name of *lectura*. Between the *lectura* and the *expositio* of St. Thomas there is hardly any difference of style, which may be an indication that he spoke very slowly in his lessons, or even dictated them.[4]

In his other theological works St. Thomas cited a great number of scripture-texts and has interpreted separately very many of them, for example, the first chapter of *Genesis* as interpreted in the Summa.[5] St. Thomas also dealt with questions of introduction, but he never wrote a treatise on inspiration; his opinions on this subject may be gathered especially from his treatises on prophecy [6] and from dispersed texts. The question of the sense of Scripture was dealt with by him several times.[7] In the beginning of his career as a teacher he treated the question of the canon, which was no problem in the middle ages,[8] although some fathers and doctors followed the dissentient view of St. Jerome. In his first public lecture, or *principium* as it was called in the middle ages, he gives a short survey of the books of both Old and New Testament. From the works of St. Jerome he knew the existence of varying texts of Holy Scripture, and it did not escape him that even the

[4] P. Mandonnet, O.P., *Revue Thomiste* (1928), 42 ff.

[5] *Summa Theol.*, I, qq. 45-48.

[6] *Ibid.*, II-II, qq. 171-174; *Q. D. de Ver.*, q. 12.

[7] *Summa Theol.*, I, q. 1, a. 10; *Quaes. Quod.*, VII, aa. 14-16; *Q. D. de Pot.*, q. 4, a. 1; *In Epist. ad Galatas*, iv, lect. 7.

[8] *Opusc.* 39.

manuscripts of the Vulgate did not present identical texts.[9] Each of his commentaries is preceded by a short special introduction.

If we wish to know why St. Thomas wrote commentaries on Holy Scripture and compiled such a work as the *Catena Aurea*, it is necessary to know the method of theological instruction in the 13th century and even earlier. In the time of St. Thomas and in the early middle ages, every instruction was given on the basis of a standard-text. At present every professor is free in the choice of a handbook, and when he does not find one which pleases him, he reads or dictates a text of his own. In the middle ages this liberty did not exist. It was customary for every faculty to have its own fixed textbook or handbook, on the basis of which the lectures were delivered and which was discussed and explained by the professor. In connection with this text the professor could treat all kinds of other questions, as the occasion offered itself. The difficulty of this method was that there could be no question of an orderly and systematic treatment of the subject-matter, which caused numerous repetitions in the lecture, disgust for learning and confused ideas for the students, as St. Thomas testifies.[10]

At the faculties of theology and at all the schools where theological instruction was given, i. e. in monasteries and cathedral-schools, the Bible was already in the early middle ages the textbook. The professor bore the title of *doctor* or *magister*, or *magister sacrae paginae*, master of Holy Scripture, a title which became an academic degree given by the Church through the authorities to whom she had given a right to confer it. This title originally conferred a double right, just as it imposed a double obligation: to preach in the church and to explain publicly the Holy Writ, two functions and two duties which were closely connected. Soon a third duty was joined to the preceding ones, to hold and to lead public disputations, in

[9] Cf., e. g., *In Epist. ad Romanos i*, lect. 6 (Vivès edition, XX, 397a); *In Psalmos, Proemium* (Vivès edition, XVIII, 230a).

[10] *Summa Theol., Prologus.*

which the master always had the last word. This right of the last word was exercised by him, at least in the 13th century, in the solemn, public, so called *determinatio* or *diffinitio* of the *magister*, who held it the day after the disputation. In this the objections made against the thesis were considered in order and refuted by the master, and the disputed question thus settled.

In the *principium* or inaugural address pronounced by St. Thomas on the occasion of his graduation as a master of theology, and which in many manuscripts bears the title of *Commendatio Sacral Scripturae*, the newly promoted says: " the doctors of Holy Scripture must excell by their excellent conduct in life, to be apt to preach with good success; they must be illuminated, to be able to instruct well; they must be well instructed to be able to refute errors in their disputations, in accordance with the words of the Apostle, who says that the ecclesiastical authority must be able to admonish with sane doctrine and to refute adversaries." [11] It is clear that the newly created master was considered a doctor of Holy Scripture; he must, first of all, preach Sacred Scripture to the faithful, because the revelation it contains has been given for the spiritual welfare of all; then he must explain it to those who can penetrate into its deeper sense, i. e. to the clergy; finally, he must defend it against those who attack it, or draw false conclusions from it. The disputations arose from the questions or difficulties put to a master on the occasion of a lecture on a special text of Scripture. Gradually the disputation disengaged itself from the normal instruction and became a separated *actus scholasticus*. In the 13th century it had in many places become the most solemn or even most important *actus scholasticus*, which lasted several hours and superseded the other lectures of the faculty which would have been held that day and the following one. The whole faculty could participate in it, with all the professors, the lower teachers and the students. It was what has been

[11] *Opusc.* 40.

called by Father Mandonnet, whom we follow here, *le tournoi des clercs,* the tournament of the clerks,[12] who went at one another, not with arms of iron and steel, but with the double-edged sword of the spirit.

Very early in the middle ages there appeared comments on Holy Scripture, first in the form of short glosses between the lines of the text, the so called *glossa interlinearis,* later in the form of more continuous explanations, often citations from the Fathers, and called *glossa ordinaria* or *marginalis,* because it was written on the margin of the sacred text. A great event for theological science was the appearance, in the middle of the 12th century, of the *Liber Sententiarum* of Peter the Lombard, in which for the first time in history a great number of the patristic texts were arranged systematically, and not according to the order of the sacred books of the canon. In the thirteenth century this book was used as a text book, not supplanting Holy Scripture, but in addition to it and subservient to it. Its purpose was only to help the student to a better understanding of the richness of Holy Writ. The interpretation of the latter remained the principal duty of the *magister* in his own lectures.

Most masters found little satisfaction in delivering lengthy lectures, especially when the instruction was elementary and for which there was no remuneration. They shifted a part of the burden which rested on their shoulders to those of subordinate teachers, well instructed and talented students, who aspired to the degree of master. In the time of St. Thomas, every master at the university of Paris could have two teachers of this kind who, under his direction, gave the elementary instruction. Both were called *baccalarei* or *baccalaurei,* although only the second had a right to this title.[13] The first was the so-called *biblicus,* also called *biblicus ordinarius cursor* [14]

[12] P. Mandonnet, O.P., *in S. Thomae Aquinatis Quaestiones Disputatae* (Paris: 1925), p. 8 (Introduction) and elsewhere.

[13] For the original meaning of this word, see A. Kleinhans, O.F.M., in *Biblica,* 1933, p. 391.

[14] Mandonnet thinks that the *cursor* is not to be mistaken for the *biblicus.* Cf.

or *baccalaureus biblicus*. His duty was to "read" the text of the Bible to his pupils and to explain it in a few words, *cursorie*, that is, without insisting on special questions, on the basis of the glosses or of parallel biblical texts. Among the Dominicans such a *biblicus* lectured every day, except on Sundays and church holidays; he had to finish the whole Bible in three years.[15] This method of teaching was called *legere bibliam biblice*, or *textualiter*, i.e., explaining only the letter of the text. It served to instill into the minds of the students first of all the knowledge of the biblical text; in the middle ages this took the place of our general and special introduction to Holy Scripture. Because the method had first been introduced in Paris and was later imitated everywhere else, it was also called *legere bibliam secundum modum parisiensem* (according to the Paris method.)

After having studied seven years under the direction of Albert the Great, St. Thomas was appointed *baccalareus biblicus* at Paris in 1252; he performed this duty for two years. He began his first public lecture with the text of the book of Baruch: "This is the book of the commandments of God; all who observe them, shall come to life."[16] Of a higher rank was the *baccalareus sententiarum*, whose duty it was to read, and to explain if necessary, the *Sententiae* of the Lombard. His instruction was less elementary than that of the *biblicus*. St. Thomas was *baccalareus sententiarum* from 1254 to 1256, when he was promoted *magister*.

Above the *baccalaurei* stood the *magister*. The best lesson-hour of the day was reserved for him, viz. the first hour of the day, the hour when the spirit is freshest, after the night's rest. His title of *magister sacrae paginae* was changed in the first half of the thirteenth century to *magister sacrae theologiae*, except, of course, in conservative England, which because of its insular character was more or less cut off from the outer world,

Revue Thomiste, 1929, p. 503 ff.; Cardinal Ehrle was not of this opinion; cf. Kleinhans, *op. cit.*, p. 392.

[15] For this and the following, see Mandonnet, *loc. cit.*

[16] *Baruch*, iv, 1; St. Thomas, *Opusc.* 39.

and where the title of *magister sacrae paginae* was kept at least a hundred years longer. The change of name was not without meaning, because it was connected with the influence of the *Sententiae* of Peter the Lombard and the rise of a systematic theology, which began to loosen itself from the text and the order of the Bible books, but not, of course, from their content. In spite of the change of name, the interpretation of Scripture remained the principal task and duty of the master; the textbook of his ordinary lectures was and remained the Bible. This is absolutely certain and the investigations of Denifle and Mandonnet have not left the slightest doubt in respect to it.[17]

The *magister sacrae paginae* or *theologiae* did not explain the biblical text *cursorie*, that is, in a few words. He often entered deeply into its sense and consequences, especially as these offered difficulties or afforded an opportunity to speculative considerations. The master delivered none but the biblical lectures, at least if he was assisted by *baccalaurei*. If he had none, he took to himself the reading and explaining of the *Sententiae* at hand, or of another famous book.

Because of the growing necessity of combatting false doctrines or opinions, the disputation was often considered more important than the ordinary lessons, which, therefore, were suppressed on the days when a master of the faculty led a *disputatio* or gave the *determinatio* which followed it. This was not a result of a diminished appreciation for Scripture, but was a pedagogical necessity. The masters of the university of Paris normally disputed only a few times a year. St. Thomas had a totally different idea of his duty as a professor and, probably to erect a barrier against the pernicious Averroism and the other vicious currents of thought which found many adherents at the university of Paris and elsewhere, he disputed two times a week during his last two stays at Paris (1256-59

[17] Cf. P. Mandonnet, "Chronologie des écrits scripturaires de S. Thomas d'Aquin," *Revue Thomiste*, 1928 and 1929 (edited also separately); H. Denifle, "Quel livre servait de base à l'enseignement des maîtres en théologie dans l'université de Paris," *Revue Thomiste*, 1894, pp. 149-161.

and 1269-72), a thing unheard-of in that time. The *determinationes* included, every week four lessons of Holy Scripture had to be left out; Mandonnet has calculated that the total number of these lessons in the whole year was about sixty five, for there were many holidays and vacations.[18]

During his stay in the Pontifical States of central Italy (1259-1269), St. Thomas conducted a dispute every fortnight, which brought the average number of his Scripture lessons to four a week.[19] At Naples the Saint conducted no disputations during the year and few months he spent there at the end of his life, but he lectured on Holy Scripture about five times a week.[20] The reason for this was most probably the fact that the university of Naples had not been founded, or approved by, the ecclesiastical authority, and therefore the theological faculty had no right to confer degrees, for which the assistance at disputations would have been necessary.[21] St. Thomas made up for the lack of disputations, not only by teaching Scripture every day, which was only his normal duty, but also by fulfilling the first, and too often neglected, task of the *magistri*-preaching. During the whole of Lent, 1273, he sermonized daily to the students of Naples and the people of the town.[22]

The commentaries St. Thomas wrote on different books of the Bible are nothing but the text of the lectures he delivered during the time he was *magister sacrae paginae*, from 1256 to 1273. St. Thomas was an ideal teacher, "the most complete type of the professor of the middle ages," as Mandonnet has typified him.[23] He delivered more lectures and disputations than any other professor of the university of Paris. He took care also to finish the annual matter of his course in the fixed

[18] *Revue Thomiste*, 1929, pp. 53-ff.; p. 68.

[19] Mandonnet, *loc. cit.*, p. 137.

[20] *Ibid.*, p. 135.

[21] *Ibid.*, p. 136.

[22] Cf. Mandonnet, *Revue Thomiste*, 1928, p. 214, as well as the literature quoted there.

[23] "Le type le plus complet du professeur au XIII[e] siècle," *Revue Thomiste*. 1929, p. 489.

time, except when he was transferred, in the midst of the academic year, from one place to another. So only two, or more properly three, of his commentaries are incomplete, viz. that on Jeremiah, which he left unfinished when he was unexpectedly called to Paris in 1269, and the commentary on the Psalms, during the writing of which he was surprised by death. He treated the Psalms and the Epistles of St. Paul at the same time, and so the commentary on the Epistles is also unfinished. But because he had already once treated the fourteen Epistles of St. Paul, Reinald of Piperno, who had written down this first commentary, combined both texts, making one of them, omitting the first part of the earlier *lectura*.[24]

It seems that St. Thomas treated first a book of the Old Testament and then one of the New. At Naples he departed from this custom and dealt every other day with a book of the Old and of the New Testament respectively. In his choice of the biblical books he did not proceed arbitrarily. After his graduation he chose as lecture-matter the books of Isaiah and Matthew, which were often treated together in the middle ages. Of the four Gospels, St. Matthew was the most in favour, while the prophet Isaiah was considered a precursor of the evangelists, or almost as one of them, because of his many predictions of Christ and his work.[25]

During his second stay at Paris, ten years later, St. Thomas chose the Gospel of St. John, in his flight of thoughts the loftiest and profoundest of the four. Amongst the books of the Old Testament he chose Job, in which the problem of Providence is discussed in such a thrilling manner. The great influence of Averroism, which the Saint came to combat, and which denied the existence of Providence, undoubtedly determined this choice. At Anagni, the place where the papal court was residing and where the central administration of the Church was established, St. Thomas explained the Canticles.

[24] *Revue Thomiste*, 1928, pp. 222 ff.

[25] Thus already St. Jerome; see St. Thomas, *In Isaiam, In Prologum Hieronymi* (Vivès edition, XVIII, 670-671).

The bride in the *Song of Songs* was generally considered to be a personification of the Church, and this may have influenced the Saint's choice. Why he has treated Jeremiah is not clear; perhaps simply because has was the second of the great Prophets. But it seems to be clear why he has treated the Psalms and the Epistles of St. Paul, the latter twice. Both books were the two most used biblical texts, and since the time of the early Fathers, a great many commentaries had been written on them.

The *Catena Aurea* was compiled by St. Thomas at the request, or the order, of Pope Urban IV, who lived just long enough to receive the *catena* on Matthew. Two famous masters, Gilbert de la Porraye and Peter the Lombard, had compiled a similar collection of glosses on the Psalms and on the Epistles of St. Paul. Thomas, who as a true scholar knew that he was second to none of them, compiled a *glossa* on the four Gospels, for which he used a number of works of Greek Fathers hitherto unknown in the West, and some of which he had had especially translated for this purpose. This was a time when great endeavours were afoot for the reunion of the Greek and Latin Churches, and St .Thomas related his work to the actuality of the moment. He composed it from obedience, but it was so dear to him that he continued it and finished it off even after the death of Adrian. The work soon became famous and was given the name of " The Golden Chain." It is not impossible that St. Thomas used the text of it in his lessons, during the time he was working on it. If so, those lectures had more the character of the lessons of a *baccalareus* than of those of a *magister.*

The form of the commentaries was prescribed by custom. To us it may seem somewhat artificial with its many divisions and subdivisions, but these were deemed necessary in that time, since the good teacher was he who made good distinctions (*qui bene distinguit, bene docet.*) Moreover, St. Thomas knew how to free himself from the scholastic method of exegesis, as, for instance, in his admirable commentary on Job, called by a

medieval scholar a *mirabile opus*.[26] The first exegetical rule of St. Thomas was, apparently, to explain the Bible by the Bible, and therefore many passages of his exegetical works, especially of the earlier ones, in which one still tastes the *baccalareus biblicus*, consist more of biblical texts than of the text of the author. And if one considers that a part of these texts were not written down by St. Thomas himself, but by others, one cannot but admire the memory of the Saint, and understand why it was said of him that he knew the whole Bible by heart.

In comparison with the citations from Holy Scripture, the Fathers are not cited so often. With regard to the sense of Scripture, St. Thomas gives first the literal one and then the "higher," or spiritual sense. In the latter he is rather sober, when compared with some of his contemporaries. In his commentary on Job he follows only the literal sense, because, so he informs his readers, there is nothing new to be said on the spiritual sense since the commentary of Pope Gregory! In his commentaries he tries to be exact and accurate and to omit nothing, rightly judging that everything in the sacred text deserves the full attention of the exegete. It should not be thought that the great thinker, as a speculative theologian, gave attention only to that which, in his eyes, was of "theological" importance, that is, of importance for his theological system. His reverence for the word of God was too great to do this. As a true exegete, he took notice of the smallest details of the text, of the names of persons and places, of the mysterious "titles" (headings) of the Psalms. He would leave nothing obscure or undiscussed. Thus he was fully what an exegete of those days and, *mutatis mutandis*, also of our days should be.

After this historical discussion of the place which the interpretation of the Bible occupied in the theological work of St. Thomas, the question arises as to the place Holy Scripture holds in his theological *system*. St. Thomas deals with this problem in the first question of his theological handbook, the

[26] Thus John of Colonna; cf. Mandonnet, *Revue Thomiste*, 1928, p. 149.

Summa. It has been explained above that in the middle ages the science of theology arose from the interpretation of Holy Scripture and that its higher form, its scope was to provide a deeper insight into the Bible's revealed truths. Now it is very remarkable that St. Thomas, when he speaks in the first question of the Summa on the nature of theology, uses the terms *sacra doctrina, sacra scriptura, scientia divinitus inspirata, divina revelatio,* apparently indiscriminately. This occurs in the first article, and again at the end of the second. Holy Scripture and *sacra doctrina* are even equalized by the word *seu* (*sacra scriptura seu doctrina.*) Remarkably enough the word *theologia* is used only a few times. At the end of the first article it is said that theology " belongs to *sacra doctrina* " (*theologia quae ad sacram doctrinam pertinet*); this gives the impression that according to St. Thomas, theology is only a part of *sacra doctrina.* But in article seven, " this science," *viz.*, the science of which he has been speaking, consequently *sacra doctrina,* is called theology: " In this science God is spoken of, for it is called theologia, *quasi sermo de Deo.*" Elsewhere St. Thomas is still more explicit, as he says in the preface of his commentary on St. Paul, when speaking of the Psalms and the Epistles of the great Apostle: " These writings contain nearly the whole doctrine of theology." And in the same preface, written at Naples at the end of his life, he says: " In the New Testament one reads, after the Gospels, the doctrine (*doctrina*) of the apostles."

In the second difficulty, made in article seven, against the thesis that God is the object of the sacred science, he says: " all that which is spoken of in a *science* belongs to the subject (St. Thomas does not say *object,* as we do) of it; but in *Holy Scripture* much is said of things other than God; therefore God cannot be the subject of this science." And the answer runs: " all which is *spoken* of in Holy Scripture is spoken of God; the objection, therefore, is worthless." It is clear that in this argument St. Thomas identifies Holy Scripture and sacred science. In article eight he asks whether the *sacra*

doctrina is *argumentativa* or not, which is to ask whether it reasons, whether it concludes, etc. His answer is that the sacred doctrine does not argue to prove its principles, that is, the articles of faith. And somewhat further he continues: "Holy Scripture, which has no (science) above it, disputes with him who denies its principles, and argues if . . ." etc. In article nine he answers the question, "Should Holy Scripture use metaphors?" by saying: ". . . the *sacra doctrina* must use metaphors."

It cannot be doubted: Holy Scripture contains, or rather *is sacra doctrina* and a science. How is this possible? That one may call Holy Scripture a doctrine, may readily be understood, since it teaches us so many things. But for St. Thomas a science is something else, that is, a *cognitio per causas*. Can Holy Scripture be spoken of thus? The answer to this question is threefold. In the first place, *sacra doctrina* is a different kind of science from the profane sciences. These are ultimately based on human experience, human understanding; theology, however, is based on the science which God has from Himself, and this is also the ultimate reason why we believe in the truth of the Bible, inspired by God, who is Himself nothing but truth. Secondly, Holy Scripture contains reasonings; St. Paul, for instance, concludes from the resurrection of Christ to the resurrection of all men (*I Cor.* xv, 12.)

But this is no complete answer. St. Thomas asks himself too, if theology is one single science; the difficulty is obvious, since theology seems to deal with a great many things which belong to the realm of other sciences, especially philosophy. He answers that theology refers all these things to God in so far as they are *revelabilia*. The sense of this word is not immediately clear, but it can be obtained from the context.[27] The object of the common sense (*sensus communis*), so he says some lines before, is that which can be perceived by the

[27] For a full discussion, cf. E. Gilson, *Le Thomisme, Introduction à la philosophie de S. Thomas d'Aquin*, 4th edition (Paris: 1942), Introduction ("Le Révélable"), pp. 8-40.

senses (the *sensibile*); this includes the *visibile* and the *audibile*. It seems therefore that the strange word *revelabile* has been formed in the same way and indicates the object of sacred science. The ear does not perceive the audible before there is sound; thus the *revelabile* is only the object of sacred science when there has been revelation, and therefore Sertillanges translates it as "*objet de la révélation.*" [28] So theology considers everything which is contained in the revealed object. When we know from revelation that Christ is man, or that man must serve God, the idea "man" has become the object of revelation. Therefore St. Thomas analyses it and many other ideas in order that we might better understand the sense of the revealed truth. This understanding is, of course, human, fallible, and not to be identified with faith. It is the product of theological thinking. But this thinking would not be theological, if it did not find its origin in the revealed truths, which have been written down for us in Holy Scripture.

Thus we find in Holy Scripture the principles of sacred doctrine, that is, the articles of faith, which are short summaries of the revealed truths; we find in it argumentations and reasonings and the refutation of errors. The theologian continues this work, making use of every human science, especially philosophy. This makes it clear why, according to St. Thomas, Holy Scripture, sacred doctrine, revealed science, and theology are one and are not essentially distinguished. Holy Scripture and (human) theology are organically tied together and can never be separated. St. Thomas would emphatically deny the modern saying of some theologians, that (literal) biblical exegesis is no theology, and the exegete of the Bible no theologian.

But to be able to be used in *sacra doctrina*, the sense of Holy Scripture must be clearly defined. According to St. Thomas, and to the medieval theologians commonly, the text of Holy

[28] Cf. the French translation of the *Summa*; Saint Thomas d'Aquin, *Somme Théologique, Dieu,* (Paris: 1925), I, 32; on p. 30, Father Sertillanges translates "divinitus revelabilia" by "tout ce que peut révéler Dieu."

Scripture may have more than one sense: a literal or historical, and a spiritual, higher, sense. The doctrine of the plurality of the senses of the Bible is old and occurs in the Epistles of St. Paul. From then up to the present time, there is an uninterrupted chain of " spiritual " interpreters of Scriptures. Many people do not understand this and think that the attributing to Scripture of a " spiritual " sense was only a remarkable or odd use of the ancient Church, taken over from Alexandrian Judaism. One needs only to read Origen, the greatest allegorizer of Scripture of all times, and also one of the greatest Christian scholars, to know that allegorizing was for him no vain game of the spirit, but the bitter earnestness of a profound Christian, who had too high an idea of Holy Scripture, of which God was the Author, to admit that the many commonnesses which occur in it had not a higher, spiritual, mystic sense, hidden from the eye of the carnal man, but open, under the light of grace, for the spiritual one. The allegorizing interpretation of Scripture was in the old Church an attempt to take the whole Bible, with all its details, into the service of the preaching of the word of God and of Christian life.

Origen, and the Alexandrians generally, went too far. The school of Antioch, with Theodore of Mopsuestia and John Chrysostom as its most prominent representatives, tried to readjust the exegetical balance by the doctrine of the *theoria* [29] and the types. The first occurs also in St. Thomas, although not under the same name. Theodore went too far and in 553, more than a century after his death, was condemned by an oecumenical council, at the instance of the Greeks. But the more moderate doctrine of Antioch stood firm, and at Alexandria the purely allegorical exegesis was gradually pressed back into the domain of the homiletical, the devotional, whilst in the dogmatical controversy literal exegesis prevailed.

St. Thomas, in his doctrine on the plurality of senses of Holy Scripture, is a disciple of Antioch. Practically he distinguishes a double sense of Scripture only, not a fourfold

[29] For the sense of this word, see A. Vaccari, S. J., in *Biblica*, 1920, pp. 3-36.

sense as others did: a sense of words and one of things, events. The first is the literal or historical sense, and has been given to the text by God as well as by the inspired writer; the latter is the spiritual sense, and has been attached by God, not to words, but to things, facts, or persons, which became thus figures, types, of the future. With certainty this sense can only be known from revelation, that is, from Scripture itself or from divine Tradition; it may be surmised when there is a great resemblance between the figures of the Old Testament and the realities of the New.[30]

In so far as it is not explicitly revealed, the spiritual sense is always uncertain and therefore cannot be used in *sacra doctrina*. But by this nothing is lost from the revealed truth, since, as one reads in the *Summa*, " Scripture does not contain in the spiritual sense anything necessary for faith which it does not clearly teach elsewhere in the literal sense." [31] And in *Quodlibetum* (VII, art. 15, ad 3) it is said: " Nothing is taught mysteriously (*occulte*) in any place of Scripture which is not explained clearly elsewhere; therefore, the spiritual explanation must always be based on the literal."

But is the literal sense itself manifold? St. Augustine in two texts deemed this possible, and it seems clear that St. Thomas, who cites the words of the famous doctor and who deals with the problem three times,[32] did not dare to contradict this flatly. In one place the opinion of the great doctor of the old Church is called by him " not incredible " [33] and in the *Summa* he calls it " not inconvenient." [34] God, indeed, is the principal Author of Holy Scripture; He knows better than we the various senses a word may have, and therefore it is not impossible that in His Wisdom He has given the words of the Bible more than one sense. It is possible that the sacred authors knew this sometimes and, to illustrate this, St. Thomas cites

[30] *Quaes. Quod.*, VII, a. 14, ad 4um.
[31] *Summa Theol.*, I, q. 1, a. 10, ad 1um.
[32] *Ibid.*, a. 10; *Quaes. Quod.*, VII, a. 14, ad 5um; *Q. D. de Pot.*, q. 3, a. 1.
[33] *Q. D. de Pot., loc. cit.*
[34] *Ibid.*

the example of the prophets, who, speaking of figures, also intended to speak of their fulfilment.[35]

Sometimes the sacred writers of the Old Testament knew the prophetic signification of persons or things and made use of this knowledge in their words or writings.[36] In these cases their words may have a double literal sense. In the second and twenty-first Psalms, for instance, David speaks first of himself when he says: " The princes came together against the Lord and against his Anointed," or " God, my God, look upon me, far from my salvation the words of my misdeeds," but he chiefly intends to speak of the passion of Christ of which his own passion was but a figure. This is evident because in both Psalms David says things which can be applied only to Christ, such as: " The Lord hath said to me: Thou art my son, this day I have begotten Thee," or " they have pierced my hands and my feet; they have numbered all my bones." [37] The last method of interpretation is wholly that of the school of Antioch and supposes with the prophets what was called by the Antiochians θεωρία, which means the beholding of persons or things of the future in persons or things of the present.[38]

St. Thomas gives no other examples of the plurality of the literal sense, and in the well-known text of *De Potentia* (IV, 1) he concedes the " non-incredibility " of the opinion of St. Augustine. Here he considers the interpretation of the words of Moses—" and the earth was waste and empty," that is, whether he is speaking of " formed " matter or of matter which was yet to receive its forms in the work of the six days. Both interpretations are possible, he says, both can be " adapted " to the text (*aptari possunt*). No one has a right to claim a monopoly for his personal exegesis. In this case, Scripture uses abstract terms which mean something concrete; two

[35] *Quaes. Quod.*, VII, a. 1.

[36] Cf. *Quaes. Quod.*, VII, a. 14, ad 5um; *In Psalmos, Proemium* (Vivès edition, XVIII, 230b).

[37] *In Psalmos, suis locis.*

[38] In his commentary on the Psalms, *Proemium*, St. Thomas attributes this opinion to St. Jerome.

concreta are possible, and if God had intended both, one could say that *Genesis* (i, 1) would have a double literal sense. The latter is not a conclusion of St. Thomas, who never says anything of the kind, although he often gives more than one explanation of difficult texts. From this silence it may be inferred that in cases like this he did not admit the existence of more than one literal sense as intended by God or by the sacred author. In the question of prophecy, there is never a plurality of *totally inadequate* literal sense, there is only what has been called a *virtual* plurality; in the cases of the second and twenty-first Psalms, for instance, the historical and the messianic interpretations are connected as *figura* and *figuratum*. Practically St. Thomas recognized the existence of one, adequate, literal sense.

St. Thomas agrees with this conclusion in the answer he gives to the difficulty: "When Scripture has more than one sense, it cannot be used as a basis of argumentation." In this answer one reads, among other things: "The senses (of Holy Scripture) are not manifold because one word would have many senses . . . all the senses are based on one, namely the literal." [39] By ascertaining this and practising it, St. Thomas has maintained the usableness of the *sacra doctrina*, which would necessarily be endangered if one word, one single expression had many not adequate or subordinated literal senses.

In connection with what has been said, a difficulty of a totally different character arises. Reading what St. Thomas writes on the relation between Scripture and revelation, one gets the impression that both are put by him on a par, or at least that he considers Holy Scripture as the only existing source of revelation. In this he seems not to be alone; a certain number of texts of Fathers of the Church give the same impression and the reformers of the sixteenth century cited them in confirmation of their doctrine of the *sufficientia Sacrae Scripturae*. Moreover, does not St. Thomas say explicitly that all that is necessary for faith can be read clearly and in the literal

[39] *Summa Theol.*, I, q. 1, a. 10, ad 1um.

sense in the Bible? Is this not the Protestant doctrine of the *perspicuitas* of Holy Scripture, and does this not practically exclude tradition as a source of revelation?

One must concede that St. Thomas rarely mentions tradition as a separate source of revelation. But this does not mean at all that he did not know it. A *locus classicus* used by every ecclesiastical writer is his commentary on *II Thess.* (ii, 15.) Saint Paul wrote: " Brethren, stand fast and hold the traditions which you were taught, whether by word or by epistle of ours." In his commentary on this text, St. Thomas remarks: " So it is clear that much has not been written in the Church which has been taught by the apostles and which, therefore, must be observed (*servanda*) because, according to the judgment of the apostles, it was better to hide much, as Dionysius says. Therefore the apostle says in *I Cor.* (xi, 34): The rest I shall order when I come." [40]

St. Thomas refers to the apostolic tradition especially and principally in the doctrine of the Sacraments. Here he often cites the above mentioned Dionysius, who was for him a disciple of the apostles and who, therefore, would be better acquainted with their doctrine than the later doctors. The form of the Sacrament of Confirmation, instituted by Christ, is known to us only from the doctrine of the apostles.[41] In his commentary on Job, St. Thomas says that the opinion that the devil is a fallen angel belongs to the tradition of the Church (*ecclesiastica traditio*),[42] thus using explicitly the word " tradition." But in spite of all this, Holy Scripture was for him by far the principal source of faith, especially with regard to the more speculative doctrines. The " necessary " truths of faith, so he says, following St. Augustine, are all clearly formulated in Holy Scripture. The meaning of this term " necessary truths " is at first not very obvious. From what has been said above it appears, for instance, that the form of the Sacrament of Confirmation (the

[40] *In II Thess. ii*, lect. 3 (Vivès edition, XXI, 446b).
[41] *Summa Theol.*, III, q. 72, a. 1, ad 1um; see also q. 74, a. 4, ad 1um.
[42] *In Job* i, lect. 2 (Vivès edition, XVIII, 6).

necessary ceremonies to administer it validly) is not included in it. For all that, it is in a certain sense necessary to know it. On the other hand, it seems not to be sufficient to include in these " necessary truths " only the four principal articles of faith: existence of God and Providence, Salvation, and the Trinity, because if only this could be read clearly in Holy Scripture, it would not be very much. Perhaps St. Thomas was thinking of the principal *symbola*,[43] or perhaps he left to St. Augustine the determination of the term " necessary."

It should be borne in mind that the Bible, as Holy *Writ*, as a book, can easily be consulted, whilst it is often very difficult to deal with the data of tradition in as much as this does not appear from the statements of Councils, or from the universally accepted belief of the Church. This fully accounts for the general custom of the Fathers and also of St. Thomas of appealing to Scripture for proof of the truths of faith, or for proof of their own opinions.

There is one form of tradition, however, on which St. Thomas often depends, even unconsciously. This is the traditional interpretation of many passages of both Old and New Testament—interpretations hallowed by tradition, confirmed by the verdicts of Councils or Popes. According to St. Thomas the general Councils of the Church only explain the teaching of the Scripture to which they appeal. Illuminated by the Spirit of God they explain to us infallibly the sense of the sacred text. The Fathers also have interpreted Holy Scripture, but in this they were not infallible. The idea and the term " unanimous opinion of the Fathers " (*unanimis consensus Patrum*), which occurs so often in Catholic theology since the Council of Trent, is not met with in the works of St. Thomas, who speaks nevertheless of " the faith of the whole Church," [44] which is much the same idea.

[43] In his *Expositio super Symbolo Apostolorum* (*Opusc.* 33), St. Thomas repeatedly speaks of " necessary " truths of faith.

[44] G. Geenen, O. P., " De Opvatting en houding van den H. Thomas van Aquino bij het gebruiken der bronnen zijner theologie,"—*Bijdragen der Nederlandsche Jezuieten*, IV (1938), 144.

This leads to a last question. Has St. Thomas as an exegete made a good and fair use of Holy Scripture, has he interpreted it faithfully and has he taken it objectively as a base for his theological speculations, or has he tried to force upon the Scripture a sense in accordance with his own views? Has he tried to shelter in his commentaries, with all their Scholastic distinctions and subdistinctions, his own Scholastic system, heavily drenched with the theories of Aristotle instead of with the spirit of the Gospel? One example out of many! It is well known that St. Augustine distinguished three kinds of sins: sins against the neighbor, against God, against oneself. In the text of the Vulgate, the first verse of the book of Job, it is said that Job was a simple and upright man, who feared God and kept from evil. To this St. Thomas applies St. Augustine's threefold division of sins; he says that the words " Job was an upright man " mean that he did not sin against the neighbor; " he feared God " means that he did not sin against God; " he kept from evil " means that he did not sin against himself. No modern exegete would borrow from St. Thomas this interpretation, and rightly so.

One thing is certain. In his exegesis St. Thomas never had the *intention* of forcing upon Scripture a sense it does not have. " We must keep to that which has been written in Scripture," he says, " as to an excellent rule of faith, so that we must add nothing to it, detract nothing, and change nothing by interpreting it badly." [45] After St. Thomas there have been theologians for whom the Scholastic system was (practically) the principal matter and the interpretation of Scripture a secondary matter, but such a mentality is far from the mind of St. Thomas. That he interpreted Scripture in accordance with the ideas of his time is understandable but for this he is not to be reproached. In point of fact, every exegete explains Scripture thus. That he explained it in accordance with the authority and the common opinion of the Church was his good right. So far as the clear passages are concerned, which have always been

[45] St. Thomas, *In De Divinis Nominibus*, Chap. II, lect. 1.

rightly interpreted by tradition, this is self-evident. With regard to the less clear passages, these must be interpreted as much as possible under the guidance of the same Spirit which has inspired them,[46] but this is guaranteed to the Church in such a manner that everyone has to submit himself to her judgment.[47]

As far as the many Scholastic distinctions are concerned, St. Thomas, using them as was customary in his time, had no intention whatsoever of doing violence to the text. To be brief, let us only examine the example from the commentary on Job. St. Thomas had inherited from the Fathers a great respect for Holy Scripture. In it everything is full of sense, nothing is superfluous. Therefore it could not be without sense, and without a special sense, that it was said of Job that he kept from evil, after it had been said that he did not sin against God and against his neighbor. Could not that be an indication that sins of Job against himself were meant? Certainly the inspired writer meant that Job did not sin at all, which, theologically interpreted, included the fact that he did not sin against himself. We may, therefore, say that the interpretation of Job (i, 1) by St. Thomas gives something more than the bare rendering of the ideas of the inspired author; it goes deeper; it may be called a "theological" rendering. The modern exegete would certainly not go so far. As far as the present case is concerned, he knows better than St. Thomas that the Orientals have a way of speaking and of writing which is different from ours, that they are often prolix and that they like using synonyms and parallel expressions. But can one reproach St. Thomas for being less fully aware of this than we are?

Thus the unity of sacred doctrine is perfectly clear with St. Thomas, and also the highest place Holy Scripture occupies in it. He did not spend all his time in explaining the letter of Sacred Scripture, although he did nothing else in his ordinary lectures after his graduation as a master. But he spent his

[46] *Quaes. Quod.*, XII, a. 26. [47] *Ibid.*, III, a. 10.

whole life in studying and penetrating its contents. He studied all the branches of sacred science with equal zeal and interest, the " positive " as well as the " speculative." Theology is *one* science; it is like a stream whose waters move forward in various branches; it is like a body with many limbs; all are necessary for the welfare of the whole and none has the right to extol itself above others. May the modern theologian and exegete understand this. Not everyone can be a specialist of biblical exegesis as it has been developed today, but every theologian needs to see that his science is always in a permanent, living contact with Holy Scripture, under the penalty of becoming sterile, or worse. If he does so, he only follows the example of the great Master.

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THE EFFECT OF BODILY TEMPERAMENT ON PSYCHICAL CHARACTERISTICS

MUCH INTEREST centers to-day in the study of what modern psychologists call " personality." Hardly any two of these psychologists agree as to what, precisely, constitutes " personality," but there is a more or less general agreement among them that it has to do with all the individual psychical and even physical characteristics which distinguish one man from another. But since there is no agreement among them as to just what the " characteristics " of man are, one writer will discuss personality from the viewpoint of one group of characteristics, another from the viewpoint of an entirely different or perhaps overlapping group. As Gates says, the term " personality,"

> . . . is likely to be misleading. It is sometimes used to imply a specific human trait or a small number of traits. Thus one author states that personality consists of physical appearance, social attitudes, and intelligence; another that it comprises intellect, character and temperament; another that it involves intelligence, emotionality, sociability, volition and morality . . . The statement that personality depends upon two or three or some other number of traits means merely that the author has arbitrarily classified the whole series of reaction tendencies in two or three or some other number of groups.[1]

The difficulty lies not so much in the arbitrariness of the classifications, as in the fact that none of the classifications includes all the characteristics which pertain to individual differentiation.

Realizing the impossibility of arriving at an adequate knowledge of the individual person by considering only one or two or three of his characteristics, another group of moderns—physi-

[1] A. I. Gates, *Elementary Psychology* (New York, 1928), pp. 518-19. (By permission of the Macmillan Company, publishers.)

cians, psychiatrists, anthropologists, mostly Italian, French, German and American—has undertaken the study of the individual with a view to determining by accurate empirical observation *everything that is knowable about him*, the proportions of his body, the structure and function of his organs, the quality of his mental and emotional reactions, etc. They seem to be under the impression that once they have catalogued all the phenomena exhibited by man, they not only will have accounted for his personality, but will have arrived at a knowledge of everything that can be known with certainty about the " whole " man, including his very nature. To attempt such a study, is, to be sure, a great undertaking, and, as might have been expected, it has not escaped the consequences of the tendency of specialists to be influenced in their interpretation of the whole by their particular knowledge of a part, to say nothing of the basic fallacy upon which such a study rests, namely, that everything knowable about man and his nature *can* be learned from empirical observation alone. However, these men have taken a step in the right direction, for the very fact that they attempt to arrive at a knowledge of man as a " whole " indicates that they have some appreciation of the fact that man *is* a whole and functions as a whole and must be studied from a " whole-making " point of view. But more important than their notions as to what constitutes the " whole " man is the very valuable data which this group of investigators has accumulated with regard to the actual observable effects of organic conditions upon psychical activities, information which contributes more than a little to a better understanding and appreciation of a primary psychological question—the body-soul relationship.

When we speak of these investigators as a " group," we do not intend to imply that they have, in all instances, been working in pre-determined or conscious collaboration, with one specific object in mind, for, although they are all more or less contemporaries and have undoubtedly been familiar with and have even used and built upon each other's data and conclusions, their disagreement in terminology and the variance in

emphasis which some have placed upon this or that aspect of the question would indicate that their grouping together is justifiable only on the basis of a common general viewpoint and purpose, the study of man as a unit, beginning with his physiological constitution—particularly his endocrine glandular pattern—and arriving ultimately at a knowledge of all his individual characteristics.

The work of this group, at least as to systematic investigation, may be considered as beginning in 1890 with the founding by Achille de Giovanni of a school of clinical anthropology in Padua. The observations reported by de Giovanni as to the correlation between the morphology of the body and the individual psychical characteristics aroused considerable interest and became the starting point for a series of further investigations and studies along the same lines, the most important of which, at least in the Italian School, have been conducted by Nicola Pende in his institute for the study of the human individual. In two books: *Endocrinologia; Patologia e Clinica Delle Glandole A Secrezione Interna*, and *Le Debolezze di Constituzione*, Pende made a detailed study attempting to show the correlation between the physique, temperament, and character of an individual as determined by the interbalance of the secretions of his endocrine glands. These and two other books, *La Biotipologie Humaine*, and *Biotipologia Umana ed Ortogenesi*, are considered the outstanding contributions of the Italian School to the study of what has been recently christened " Constitutional Psychology," which for the endocrinologists is practically synonymous with " Endocrine Psychology." Other important contributors are *Le Legge de Correlzazione Morfologia dei Tippa Individuali*, by Giacinto Viola, and *Endocrinologia*, by S. Distefano.

In France, Sigaud, a physician and contemporary of Di Giovanni, undertook a series of experiments to establish the correlation between temperament, morphology, and psychical qualities. He and his followers concluded that temperament was the primary determinant of morphological and psychical individual differences. Sigaud expresses his views on tempera-

ment in his *Traite Clinique de la Digestion*, and in a second work, *La Forme Humaine*, correlated temperament with the morphology of the human body. His most outstanding disciple was Leon MacAuliffe who later, however, departed somewhat from his master's doctrine on temperament.

In Germany, the most outstanding contribution to the subject was made by Ernst Kretschmer in his *Koperbau und Charackter* published first in 1911 in Berlin and since then many times reprinted and translated into other languages. Kretschmer was primarily a psychiatrist, but from his observations on the correlation between bodily structure and the two forms of insanity known as schizophrenia and manic-depression, he evolved a theory of personality which he considered applicable to normal people also. He too conceived of personality as the total product of bodily constitution, temperament, and character. His classification of morphological types into " pyknic," " athletic " and " asthenic " (later reduced to " pyknic " and " leptosome "), and of psychical types into " schizothymes " and " cyclothymes " has become famous and is widely used by psychologists and psychiatrists.

Most of these men are, as we have already noted, primarily physicians, anthropologists, or psychiatrists, but in the course of investigation in their various fields, so striking was the correlation observed between physiological states of the human body and mental and emotional characteristics, that they were forced, so to speak, into the field of psychology. The physicians soon realized that a knowledge of their patient's psychical make-up was a valuable aid in the diagnosis of his physical maladies; the psychiatrists found that various types of mental abnormality could be more easily determined through correlated constitutional inadequacies. Interested first in abnormalities of body and mind, these investigators soon inclined to the view that the distinction between " abnormal " and " normal," on the mental side as well as the physical, was simply a difference of degree, not of kind, so much so that every person by reason of his own peculiar, individual, constitutional make-up, had *tendencies* toward certain types of physical and mental

abnormality, in such a way that, were he to become sick at all, it would probably be with definite, predictable diseases, and were he to become mentally deranged at all, he would develop a certain type of insanity. Thus the clinical observation of abnormalities threw much light upon the nature and causes of the individual physical and psychical differences so obvious among ordinary normal people.

Many of these investigators were particularly impressed with the role played by the glands of internal secretion or endocrine glands—the thyroid, pituitary, adrenals, etc.—in the determination of individual physical and psychical characteristics. Many of them are convinced that the endocrine glands are the primary cause of all individual differences; some say " probably," a few, only " possibly." In America, many medical men specializing in the study of endocrine glands are becoming more and more interested in the psychological aspect of the question and are already using somatic and psychical characteristics as diagnostics in the determination of endocrine disorders. Most of these physicians are, however, still primarily concerned with pathologies of the endocrine glands and how to cure them. But some have become so fascinated by the prospect of a " new psychology " of the endocrine glands, that they have stepped out of their clinics long enough to write books about it. Perhaps the most enthusiastic of this latter group, on the American front, is Dr. Louis Berman, of New York, who, in his work, " The Glands Regulating Personality," becomes almost lyrical in his enthusiasm for the glands of internal secretion as the " Open Sesame " to all the mysteries of human nature. Another enthusiastic student of the subject, in America, is Sante Naccarati, the American spokesman of Pende and the translator of his works, who himself has contributed considerably to the literature on the subject, especially by his articles in various Journals of Psychology.[2]

[2] " The Morphological Aspect of Intelligence," *Archives of Psychology*, XLV (1921). " The Influence of Constitutional Factors on Behavior," *Journal of Experimental Psychology*, VI (1923), 257. " The Relation of Morphology to Temperament," *Journal of Abnormal and Social Psychology*, XIX (1924), 263.

These are but a few of the more outstanding proponents of what might be called the " endocrinal theory of personality " or, more precisely, the " endocrinal theory of temperament," since temperament is for them the basis of personality. They have, in their writings, dealt with the subject from the " whole-making " point of view. The literature on various and particular phases of the question is inexhaustable.

By profession these men are scientists. They claim to be concerned with the study of man only from the viewpoint of the " facts " about him, which, they say, can be determined only by accurate empirical observation. They deny any intention of entangling themselves in " metaphysics," or concerning themselves with the " dreams of philosophers." But, despite their protestations, they do not adhere to their promise of confining themselves to the microscope, the X-ray, the clinical couch, and the questionnaire. The temptation to " philosophize " becomes too irresistible. Seeking to explain the individual " as a whole," they soon discover that there are certain things about man that are obviously a part of the " whole," yet which do not show up on the X-ray plates, the process of his thinking, for instance. So they begin to talk about those parts of man which they cannot see; they speak of his " mind " as something somehow distinct from his observable mental reactions. They observe that their patient does not always follow the course of action that various visceral pressures and nervous tensions would indicate that he is inclined to follow; so they begin to discuss his " will-power," as something different from his " physical " emotions. All this is against their thesis, for they started out with the premise that everything knowable about man would yield to empirical observation. So they seek a way out of the dilemma. A loop-hole presents itself in the fact that there is obviously some sort of close relationship between a man's organic functions and his psychical reactions. They observe, for instance, that a pathological decrease in thyroid secretion is usually accompanied by a dulling of mental acumen, that an excessive secretion of adrenalin by the adrenal glands is conducive to increased emotional excitability. They " save

face" by proclaiming that thinking and willing, are functions of bodily organs, comparable to digestion, respiration or circulation, but functions which science has not yet advanced sufficiently to clearly analyze and determine. With better X-rays we will be able to photograph man's thoughts and feelings. We must look forward confidently to the day when more powerful microscopes will prove thought to be simply thinned out matter and the "soul" a mere product, perhaps, of radio-activity. Some of them maintain, apparently, that even now we have sufficient evidence to prove the complete materiality of man. Says Berman:

> One of the great achievements of modern science has been the release of thought from the theological dogma, even now accepted as gospel truth by hundreds of millions, that the personality consists of the manifestations of a "soul," a reality which is made up of "spirit," opposed in its nature and activities to "matter," and consequently to the "body" palpably flesh and blood. In the past the scientific attitude has done good destructive work and paved the way for more rational conceptions. Not until quite recently, however, has it substituted any really satisfactory and useful data for those it demolished" (i. e. the data of endocrinology).[3]

Yet Dr. Berman is an authority on endocrine glands and will be quoted often in this paper as a reliable source of *empirical* endocrine data.

Not all workers in the field have, however, gone to such extremes as the author of the above quotation. Many admit the existence in man of some sort of immaterial force, call it "soul" if you will, somehow distinguishable from his body. These have altered the propositum somewhat; they do not intend to formulate a complete explanation of the whole man from empirical data, but rather to explain as much of the whole as can be determined by empirical observation. Some too are restrained from extravagant conclusions by reason, no doubt, of their belief in a spiritual, immortal soul. Others seem to

[3] Louis Berman, "Anthropology and the Endocrine Glands," *Scientific Monthly*, XXI (1925), 2. (By permission of the Editors, The Scientific Monthly.)

manifest a sort of groping attitude, as though they realize the need for solid principles to give support to their data.

Perhaps the majority of the endocrinologists, if they are not already out and out materialists, at least show a definitely materialistic trend of mind, with all its ugly consequences. One reason for this is the fact that the data of endocrinology is peculiarly susceptible to materialistic interpretation, unless one is protected by true principles with regard to the nature of the soul and its powers, the nature of the body-soul union and the body-soul interdependence, a protection which most of the endocrine workers lack. It is evident that a knowledge and acceptance of sound principles would be of inestimable value to them. It would give a firm basis, direction, and orientation to their work and would render their research easier and more fruitful.

If some of them do realize the need for such principles, they do not know where to turn. They are sceptical, because, as they say, history has shown that philosophies come and go; principles considered true to-day are discarded tomorrow. If each succeeding system of thought has been displaced by a subsequent one, how can any of them be depended upon? Such an attitude is, of course, based on the false assumption that all philosophies have been displaced by later ones, whereas only the false ones have failed to stand the test of time, precisely because they were false. One might suggest to them, of course, that the Aristotelian philosophy, for instance, has never been discarded, but only temporarily forgotten or misinterpreted or obscured by current false philosophies. Or one might mention to them the work of St. Thomas in the field of philosophy. Undoubtedly this would be dismissed as " religious " philosophy. If some were to become interested, they would probably smile when they came across some of the medical opinions of Aristotle and St. Thomas, not adverting to the fact, of course, that these men were not doctors of medicine but were merely basing their observations upon the medical opinions of the day, which though crude and now antiquated, were, nevertheless, the embryo from which modern medicine has developed, and were,

in their broad outlines, not fundamentally different from the more refined doctrines of modern medical science. Nor do they realize that those opinions had a basis of truth sufficient for the rearing upon them of a sturdy edifice of true psychology, which, with the aid of careful introspection and logical reasoning, can and has been built up even from the data of common experience and common observation, having no essential need of the highly precise analyses and superfine calculations of modern medicine. As a matter of fact, the endocrinal theory of temperament exhibits a very notable fundamental similarity to the ancient-medieval theory of the " humors " as the chief determinant of individual somatic and psychical characteristics, and its proven data is particularly compatible with principles of Aristotelian-Thomistic psychology.

It would seem of value, then, to point out the essential similarity of the psysiological bases upon which the two theories are built, with a view to establishing their compatibility from the viewpoint of psychology. This we will attempt to do in this paper. With this latter objective in mind, however, we will confine ourselves chiefly to that phase of the question with which psychology is most concerned, i. e. the influence exerted by bodily temperament upon the psychical characteristics, treating the morphological aspects of the question only insofar as is necessary for an understanding of the endocrinal theory as a whole. Since bodily temperament may be considered, in both theories, as the point of departure for the determination of psychical differences, such a discussion will involve a step by step comparison between the two theories as to the nature and causes of temperament, the division of temperament into various " types " and the psychical characteristics accompanying each type. We will then attempt to indicate how the principles of Aristotelian-Thomistic psychology render the endocrine data intelligible.

The importance of such a subject is indicated by two facts: first, the great progress made in the study and knowledge of endocrinology in recent years, together with the great interest aroused as to its future possibilities, and, second, the tragic

trend which the endocrinal theory of personality is taking in the field of psychology and ethics. As to the first fact, although endocrinologists admit that comparatively little is yet known about the function of endocrine glands, enough data has been established to arouse a feverish excitement as to the influence which the doctrine of the glands as the determinant of personality will exert upon education, sociology, eugenics, criminology, and morality. As Jane Stafford says, " With increased knowledge, interest in this subject has grown into a mighty crescendo till at the present time endocrine research is going on at a furious pace all over the world and with breath-taking results." [4]

As to the second fact, even more " breath-taking " is the " philosophy " which some of the endocrinologists are spinning out of their clinical findings. The following quotations are an example of that strange confusion of fact and fiction which a lack of sound philosophical principles can beget.

> Mind, still regarded by most of mankind as something distinct and apart from the body, is thus exhibited as but part and parcel of it. . . . The sense organs of the body mediate the primary mind stuff. Without internal secretions and a vegetative system there could be no soul . . . The internal secretions mediate the primary soul stuff. Mind is thus emulsified with body as a matter of cold literal fact. The soul was once a subtlety of metaphysics. Now, when mind appears soaked in matter saturated with chemicals like the hormones, therefore woven out of material threads, the independent entity created out of intangible spirit flies like a ghost at dawn.[5]
>
> Behavior may be defined as the resultant of the organism's pressure against the environment's counter pressure until there is a sufficient reduction of the specifically exciting intravisceral pressure. Just as water flows to its own level, so will conduct flow to reduce intravisceral pressure to its own level. A physics of the soul comes into prospect in which a mathematical analysis will state the process quantitatively in terms of some common unit of pressure.
>
> Not only conduct, but also character, because it is past conduct repeated, learned, and fixed, will be so statable. For intravisceral tonus or pressure is not simply or only an acute or passing affair.

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[4] Jane Stafford, *The Advance of Science* (New York, 1934).

[5] Louis Berman, M.D., *The Glands Regulating Personality* (New York, 1930), p. 201.

There is for it a persistent or average figure, the so-called normal for it, below which or above which the acute situation will bring it. Character becomes then a matter of standards in the vegetative system. Character, indeed, is created by different standard intra-visceral pressures of the organism.[6]

The poetic genius within him (man), as Blake called it, struggled on from one dogma concerning his nature to another. Behavior malignant or beneficial, horrible in its tragedy and pitiable in its comedy, flowed inevitably on. Witchcraft, trials, and the tortures of the Spanish Inquisition belong among the more mentionable consequences of some of man's theories about his own nature and its requirements.

Heretofore the imaginative spirit has had its day in the matter. And, curiously enough, an obsession to subjugate the natural has made it exalt the supernatural. . . .

But now for a couple of centuries the critical spirit, which is the spirit of science, has been invading the affairs of men. Humble but persistent corrosive of delusion, it has infiltrated the furthest bounds of ignorance and superstition. It has not dared to assert the supremacy of its fundamental views upon the everyday problems of human life because it was without concrete means of vindicating its claims. That lack is now supplied by the growing understanding of the chemical factors as the controllers and dictators of all the legion aspects of life.

The profoundest achievement of the biochemist will be the change his teachings and discoveries will bring about in man's attitude toward himself. When he comes to realize himself as a chemical machine that can, within limits, be remodeled, overhauled and repaired, as an automobile can be, within limits, when he becomes saturated with the significance of his endocrine-vegetative system at every turn and move of his life, and when sympathy and pity informed by knowledge and understanding will come to regulate his relationships with the lowest and most despised of the men, women, and children about him, the era of the first real civilization will properly be said to be born.

Morality, as society's code of conduct for its members, will change in the direction of a greater flexibility with the establishment of organic differences in human types.[7]

All of which is very sad, and makes it clear how much the new "child of science," endocrinology, is destined to contribute to the already almost totally materialistic trend of modern

[6] *Ibid.*, p. 142.

[7] *Ibid.*, pp. 327-28.

thought, unless it can be saved from itself and put back on the right track. This is an accomplishment which would necessitate an acceptance by the endocrinologists of true principles of philosophy. Perhaps this is too much to be hoped for, at least until they themselves have learned, by experience, the necessity for such principles. But at least we can indicate certain points of contact, and point out certain lines along which the endocrinologists might be approached. That is all this paper professes to do.

I. The Nature of Temperament

1. *The Teaching of the Moderns.*

In common parlance, a " temperamental " person is one given to violent outbursts of emotion on slight provocation. The term has come to be associated with artists of various kinds, who are supposed to be emotionally unstable and highly excitable. Perhaps this popular notion has had some influence upon a large number of modern psychologists who conceive of temperament as the sum-total of a person's " affective " qualities (the " affective organization," as Bridges calls it,[8] " emotional traits and tendencies," according to Gates,[9] or " affective forms of action which depend on the co-operation of innate affective and volitional dispositions," according to Meumann).[10]

Whether the popular notion of temperament has influenced the psychologists' conception of it or the psychologists' conception is responsible for the popular notion, both have two things in common: a placing of the emphasis on the observable psychical manifestations themselves rather than on any physiological substratum which might underlie these manifestations, and a confining of the term to emotional qualities, to the exclu-

[8] James W. Bridges, *An Outline of Abnormal Psychology* (Columbus, O., 1925), p. 117.

[9] A. I. Gates, *op. cit.*, pp. 518-19.

[10] A. A. Roback, *Psychology of Character* (New York, 1927), p. 81. (Quotations from this work are printed by special permission of the publishers, Harcourt, Brace and Company, Inc.)

sion, apparently, of intellectual qualities. As to the first point, such a view certainly represents a departure from the meaning of the Latin original of the word, *temperamentum*, which signifies a " mixture in due proportion," " the proper or natural quality of a thing, when it is not too great, not too cold, etc.," which reduces the term as it pertains to the human species to a physiological disposition. Though it is more or less generally admitted by the moderns that individual psychical characteristics are in some way affected by physiological conditions, the term " temperament " is used by most of them to indicate the psychic characteristics themselves. This represents, in relation to the meaning of the Latin original of the word, an inversion of viewpoint. The proper primary meaning of the English word " temperament " is still, according to Webster, internal constitution with respect to balance or mixture of qualities or parts. As to the second point, the moderns' exclusion of intellectual qualities from the realm of influence exerted by temperament is from traditional notions, as we shall see later.

Among the endocrinologists, there is, as already noted, an agreement that the constituent elements of empiriological personality are morphology, temperament, and character. They might also be said to agree, in general, that temperament, properly so-called, is the physiological disposition of the human body, viewed as the basis of all psychical characteristics, including intellectual, in which view they depart from the notions of perhaps the majority of modern psychologists.

Pende, for instance, says " it is evident that we have no reason for making a sharp distinction between temperament and constitution, the former being simply the dynamic-humoral aspect of the latter," [11] which places temperament on a physiological level. The following passage might suggest, at first sight, that he considers temperament as something entirely unrelated to psychical qualities:

[11] Nicola Pende, *Constitutional Inadequacies*, Translated from the Italian by Sante Naccarati (Philadelphia, 1928), p. 25. (Quotations from this work are printed by special permission of the publishers, Lea & Febiger.)

We may graphically represent the constitution as a triangular pyramid, the base of which encloses the patrimony of the individual's characteristics and the variations occuring during the evolutionary stages. From the base three faces rise with sides joined one to another, the morphological, the dynamic-humoral (temperament) and the psychological (character, intelligence). The synthesis of the three faces is the apex of the pyramid, that is the synthesis of the individual's vital properties, his resistance to his environment and his complete dynamic output.[12]

But here he is simply stressing the fact that the term " temperament " applies properly and primarily to the physiological side of the constitution, but to the physiological side considered as the determining factor in all the individual psychical characteristics, for he says that the constitution

> . . . is governed by what we may term a correlational principle, according to which the various combinations of organs and organic fluids and the special relationships or anatomical and functional correlations between the parts of the body which *determine the different physical and mental constitutions* vary according to the characteristics that are dominant in the inter-organic equilibrium.
>
> Hence the two terms and concepts " constitution " and " temperament " are even now coupled together. The latter is still regarded as the dominant *psycho-physiological* note in a given individual, due to a predominance or deficiency of a function and, especially, of a humoral state, in the general dynamic balance. . . .[13]

Hence temperament is for him the physiological make-up viewed from the aspect of its relation to the psychical make-up, of which it forms the basis. The characteristics considered in themselves, abstracting from their basis, constitutes the purely " psychological " side of the constitution, i. e. " character, intelligence," both of which are basically conditioned by the physiological temperament. Thus he does not exclude intellectual characteristics from the realm of temperament; they are the effects of temperament, along with all the other psychical characteristics.

It is also clear how character is intimately connected with the constitution through the path of temperament.

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[12] *Ibid.*, p. 25.

[13] *Ibid.*, p. 18.

In view of the results of modern psycho-physiological investigation conducted along constitutional lines, we can no longer doubt that intelligence varies in quality as well as in degree in different individuals nor that it is related to the general constitution of the subject. . . .[14]

Kretschmer, at one point in his book *Physique and Character* would apparently attach the term "temperament" to the "psycho-" end of the psycho-physiological apparatus, for he says:

The temperament. It is as we know certainly from empirical observation, co-determined by the chemistry of the blood and the humors of the body. Its physical correlate is the brain-glandular apparatus. The temperament is that group of mental events which is correlated with the physical structure. . . .[15]

However, at another point in the same book he admits that he has not decided at which end it belongs. He calls it a "heuristic" notion, i. e., one yet to be sufficiently investigated. "And finally the expression 'temperament' has for us no well-defined meaning, but it is a heuristic notion, the breadth of whose field of reference we have not yet determined."[16] Nevertheless he proceeds to use the word as though he would indicate by it that part of the psycho-physiological apparatus which influences the psychical qualities, which could be only their physical correlate, the "physical structure," according to his above quoted passage. The following quotation will exemplify this, and make clear the fact that he considers intellectual characteristics also as coming within the influence of temperament, together with all the other psychical qualities.

The temperament, so far as our empirical investigations go, has a clear influence on the following psychic qualities: (1) On the psychaesthesia, abnormal sensitivity or insensitivity to psychic stimulation; (2) on the mood-coloring, the pleasure or pain coloring of the psychic content, particularly on the scale which lies between gay

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[14] *Ibid.*, p. 25.

[15] Ernst Kretschmer, *Physique and Character*, Translated from the German by W. J. Sprott (London, 1936), p. 259.

[16] *Ibid.*

and sorrowful; (3) on the psychic tempo, the acceleration or retardation of the psychic processes in general, as regards their particular rhythm (tenaciously holding back, suddenly darting forward, inhibition, formation of complexes); (4) on the psychomotility; on the general movement-tempo (mobile or comfortable) as well as on the special character of psychic activity (lame, stiff, hasty, vigorous, smooth, rounded, etc.)

In addition it may be empirically established that the forces which influence all these factors play an important part in the determination of the types of perception and imagination, in what is called intelligence or mental disposition. . . .[17]

His conception of " character " is practically the same as Pende's, i. e. the sum-total of an individual's psychical qualities considered in themselves, abstracting from their " bodily correlates " or physiological basis. He would include in character, however, certain modification brought about in the innate psychical characteristics by such external influences as education, environment, etc.

The notion of " constitution " is essentially psycho-physical, and general-biological and has to do with the interrelations of body and mind. The concept of " character," however, is a purely psychological one. By " character " we understand the totality of all possibilities of affective and voluntary reaction of any given individual, as they come out in the course of his development, that is to say what he inherits plus the following exogenous factors: bodily influence, psychic education, milieu, and experience.

By " character " we understand the totality of all possibilities of affective and voluntary reaction of any given individual, as they come out in the course of his development, that is to say what he inherits plus the following exogenous factors: bodily influence, psychic education, milieu, and experience.

The expression " character " lays the accent on the affective side of the total personality, without, of course, the intelligence being separated from it at any given point. The notion of " character " has a great deal in common with the notion of constitution, namely such psychic qualities as are inherited; it eliminates, however, the bodily correlates, which the notion of constitution includes, while on the other hand it includes exogenous factors, the result of

[17] *Ibid.*, pp. 259-60.

education and environment in particular, as important elements, which are left out of the notion of constitution.

Outside this exactly defined sphere of reference one can use the expression " character " for the general structure of the personality, without laying any particular stress on the differences between constitutional factors and those which are exogenously developed.[18]

Here again, by eliminating the " bodily correlates " from " character," and yet including them in " constitution," which is " essentially psychophysical," he leaves no other " field of reference " for temperament but the " bodily correlates " themselves. This, no doubt, is what Dr. Strauss has in mind when he says, in the introduction to Aller's " Psychology of Character," " in my opinion, his (Kretschmer's, great work " Physique and Character," should rather have been entitled " Temperament and Character." [19]

The French School has done away with all discussions as to what they mean by " temperament " by simply substituting for it the term " constitution," constitution being for them the general physiological condition resulting from the predominance of some particular system in the organism and serving as a basis for individual psychical characteristics. As Roback says:

Rostan, following the line of this systematic school to its logical conclusion, substituted the term " constitution " for that of " temperament " and derived his six kinds of constitutions from the predominance of the various systems in the economy of the organism.[20]

In emphasizing the predominance of some one physiological system in the development of the organism as a basis of classification of types, Sigaud of course made no departure from his predecessors in France who had adopted the term " constitution " to replace the word " temperament " . . . .[21]

There can be no question, then, as to where this school places the emphasis in the signification of " temperament," namely, on the physiological basis of psychical characteristics rather

[18] *Ibid.*, pp. 258-59.

[19] R. Allers, *Psychology of Character* (New York, 1939), Int.

[20] Roback, *op. cit.*, p. 58.

[21] *Ibid.*, p. 89.

than on the characteristics themselves. Nor do they exclude intellectual qualities as resultants of this basis, for in describing the psychical " types " of individuals corresponding to the various constitutions or temperaments, they include intellectual as well as affective characteristics.

From all this, then, we might formulate a definition of temperament which would represent, basically, the general notion of that group of scientists whom we have classified under the general designation of " endocrinologists," by saying that temperament is the innate, characteristic, physiological structure and functional disposition of certain bodily organs and tissues, regarded particularly from the viewpoint of the influence which such structure and disposition exert upon the characteristic sensational, emotional, intellectual and volitional reactions of an individual throughout life, as well as upon his somatic or morphological characteristics.

We say " innate " rather than " hereditary " structure and functional disposition, for while the endocrinologists frequently use the term " hereditary " in a broad sense, geneticists limit it to those characteristics which an individual receives from his ancestors at the time of conception, through the chromosomal genes, whereas " innate " includes various modifications of the embryonic organs not due to " heredity " in the technical sense of the word, but resulting rather from intra-uterine influences such as inadequate or excessive supply of various formative and nutritive substances by the body of the mother, pre-natal accidents, disadvantages arising from the simultaneous presence of other fetuses in the womb, general intra-uterine environment, etc., all of which might profoundly influence an individual's entire physiological and psychical future.

By the word " characteristic," in both places in the definition, is meant " characteristic of the individual " rather than of the species, for while it is presupposed that all human beings have specifically the same physiological and psychical constitution—allowing, of course, in the physiological order, for the differences due to sex—it is generally held that no two individuals are ever born with exactly the same condition of their physio-

logical and psychical constitution, not even identical twins, although they are presumed to have received exactly the same kind of genes and to have been subject to approximately the same intra-uterine influences.

Moreover, we say " certain " organs and tissues, for while there is a growing tendency among modern biologists, psychologists, etc., to consider all the bodily structures as in some way contributing to psychical characteristics, little evidence has been produced to show that this is true, whereas the effect of the condition of such organs as the brain, the nervous system, the endocrine glands, etc., upon the psychical activities has been well established.

Under " organs " we include not only the organs themselves but the fluid media in which many of them are immersed and which are essential to their normal functioning, as well, of course, as the fluids contained within some of the organs as an essential part of them, as, for instance, the spinal fluid of the nervous system, the interstitial brain fluids, etc. Under " tissues " we include the blood, following many leading medical authorities. By " sensational " reactions we refer here chiefly to cognitive reactions of the internal senses, for while the condition of the external sense organs may be considered, to some degree, as a phase of temperamental disposition, the reactions of the external senses cannot properly be called " psychical " until perception takes place, which involves the internal senses. " Characteristic sensational reactions " refers, therefore, chiefly to an individual's better or worse powers of memory, imagination, common sense, etc.

By characteristic " intellectual " reactions is meant primarily an individual's innate qualities of intellect, better or worse as the case may be, insofar as they can be judged from the quality of its functions. We might also include under characteristic intellectual reactions, the possibly innate aptitude for particular kinds of mental activity, speculative, practical, scientific, and artistic, although little is known as to the influence, if any, of physiological dispositions on particular intellectual talents.

Characteristic " volitional " reactions refers chiefly to strength or weakness of will, tendency of individual wills to choose certain kinds of particular goods in preference to others.

The phrase " throughout life " in the definition is very significant. Innate structural and functional peculiarities of organs and tissues are more or less only " potential " at the time of birth, i. e. they are tendencies inherent in the embryonic organs which destine them for development, under normal conditions, along certain predetermined lines. The organic modifications attendant upon the advent of puberty, maturity and senescence and, in women, of pregnancy, child-birth and menopause, may be considered merely as phases of this normal predetermined development. But any number of accidental circumstances and events may come about throughout life which will profoundly interfere with the normal condition and functioning of the organism. Physical environment (food, climate, etc.), diseases, accidents, may effect temporary or even permanent changes in the physiological economy, but only down to the level of and in proportion to the basic, innate, more or less permanent organic structure and disposition. Temperament, properly speaking, is confined to the basic, inborn structure and dispositional qualities of the organism and abstracts from the temporary or even permanent permutations brought about in the course of life by accidental circumstances. Strictly, the only change which temperament undergoes is that connected with the normal development and decline of the organism throughout the life span.

The same is true to some extent of the psychical characteristics correlated with the bodily temperament, i. e., they are only " potentialities " at birth, differing in degree with each individual born and destined for a normal development along certain lines, within the limits set by the basic physiology. Throughout life, these characteristics are subject, even more so, perhaps, than are the physical organs, to countless changes and modifications arising from both internal influences such as pathological changes in the body, personal effort, volitional control, etc., and external influences such as psychical environ-

ment, education, opportunity, occupation, but again even here ordinarily only down to the level of and in proportion to the basic temperament. These changes in the psychical characteristics themselves pertain more to character than to temperament, since character, as the endocrinologists conceive it, is, as we have seen, the complexus of individual psychical qualities themselves at any given point in life, resulting from the bodily temperament plus modifications introduced by both internal and external influences. Character so considered might be called psychological character, as distinguished, to some extent, from moral character. Moral character introduces elements extraneous to character considered as a purely psychological entity. It involves the conformity or non-conformity of psychical acts to norms of morality, the cultivation of vices and virtues, etc., all of which involve partially exogenous influences brought to bear upon the native psychical characteristics but which do, nevertheless, affect these characteristics even from a purely psychological aspect. Thus, moral character, while under some aspects distinguishable from psychological character, is, nevertheless, intimately connected with it and, like psychological character, is correlated to some extent with the physiological temperament. A person, for instance, who is especially prone to incontinence or anger by reason of his characteristic physiological and psychical make-up will have much more difficulty, and, in the supernatural order, will require more grace, in practicing the virtues of chastity and meekness than will the individual who is not so inclined physiologically and psychically. Also " fixations," " complexes," " inhibitions," etc., to use modern terminology, resulting from any number of physiological and psychical conditions even in what are considered normal persons, may exert a very definite influence upon moral character. In this paper, however, we will confine " character " to its purely psychological aspect. Moreover when we speak of the " psychical characteristics of temperament," we refer to those individual characteristic ways of reacting psychically to which a person is prone by reason of his bodily temperament,

without implying, as some of the endocrinologists do, that he always or of necessity must so react.

We have concluded the definition of temperament with the phrase " as well as upon his somatic or morphological characteristics," for while we have excluded this aspect of temperament from our present discussion and have therefore not considered the endocrinologists' notions of this phase of temperament, nevertheless it might be said that in general most of them consider the characteristic morphological structure of an individual as also resulting from his temperamental pattern, i. e. from the innate structure and functional disposition of certain organs and tissues, in such a way that individuals endowed with a particular group of psychical characteristics will generally have also, they say, a corresponding somatic make-up as to height, weight, bone structure, etc. This aspect of temperament has been stressed particularly by Kretschmer. However this phase of temperament pertains more to medicine and anthropology than to psychology.

Finally, we have said in the definition that temperament is the physiological disposition " particularly " from the viewpoint of its effect on the psychical and morphological characteristics, because the same structure and functional disposition of the organs and tissues that affects these characteristics also frequently produces tendencies towards certain diseases. Consequently some endocrinologists speak of such tendencies as also coming from " temperament "; usually, however, the term is not employed in connection with this aspect of human physiology, but only in relation to psychical characteristics.

Few of the endocrinologists admit all of the distinctions or use all of the terms we have employed in enumerating psychical activities. Nevertheless, this is, in scholastic language, fundamentally what they mean in their language.

The possibilities of mutual influence and interplay among all these reactions of which we have been speaking, involving as they do the as yet comparatively little known intricacies of the human body as well as the unfathomed complexities of the human soul, make it evident that the question of temperament

is anything but a simple one. It involves matters that have been perplexing great minds for centuries and only a few of the greatest minds in history have succeded in unraveling some of its mysteries.

The most important point with regard to the endocrinologists' ideas of the nature of temperament is, at the present stage of our consideration, the fact that they consider temperament as the *physiological basis* of *all* the individual psychical characteristics, including the intellectual, in which they depart from the views held by perhaps the majority of modern psychologists.

2. *The Teaching of Aristotle and St. Thomas.*

That Aristotle and St. Thomas considered temperament a matter of the structure and functional disposition of the bodily organs themselves, is evident from the fact that they accepted the theory current in their respective days as to the composition of human bodies. In the following chapter we will consider this theory more in detail. Substantially it was this: the human body was derived, ultimately, from the four inorganic elements —earth, fire, air, and water. The process was as follows: from the mixture of the four elements were generated four humors— the blood, the phlegma or pituita, the bile or cholera, and the atra-bile or melancholia which were the primary organic compounds. In the humors the four elements remained only virtually, by reason of their respective qualities, i. e., the coldness of the earth, the warmth of the fire, the dryness of the air, and the wetness of the water. In each humor were various combinations of these qualities. The blood was warm and moist; the phlegma, cold and moist; the bile, warm and dry; the atra-bile, cold and dry. The four humors combined to form various types of organic tissue, such as bone, nerve, and muscle; and these various types of tissue combined to form the particular organs required by the human body. In the organs, the four qualities derived from the humors were in more or less of an equilibrium. The more closely this equilibrium approached perfect evenness, the better would be the structure and functional disposition of the bodily organs, and consequently, of the body as a whole.

Once the body was formed and the organs functioning, the liver manufactured the four humors from the digested food.[22] These were carried by the blood, itself one of the humors, to all the parts of the body, and were absorbed from the blood stream by the various organs, for their nutrition. While in the organs of the human body the equilibrium of the humoral qualities was, in general, much more even than in the bodies of animals, within the human species the degree of equilibrium varied with each individual according to the predominance in his cold blood of one of the four humors, which would affect the equilibrium in his organs and consequently their structure and functional disposition, which would thus vary in different individuals.

For the equilibrium of the four humoral qualities in the bodily organs and the organic disposition resulting therefrom, the Latin writers used the word *complexio*, which means, primarily, " a close conjunction, " and secondarily " a habit of body." They preferred *complexio* to *temperamentum*, probably because it was closer to the Greek. *Temperamentum* means primarily " mixture in due proportion " and secondarily, " the proper or natural quality of a thing when it has its proper measure," and therefore expresses the same idea contained in *complexio*, according to the above described theory. Early English translators of the Latin writers, however, rendered *complexio* sometimes into " temperament," sometimes into " complexion," but usually into " temperament," when it was a question of human bodies. The same is done by the best modern translators, e. g. in the English rendition of St. Thomas' *Summa Theologica* and *Summa Contra Gentiles*, by the English Dominicans. In translating passages from Latin works, therefore, we will render *complexio* as " temperament." For passages from the two Summas of St. Thomas, we will use the translations of the English Dominicans.

That St. Thomas, following Aristotle, accepted the theory of physiological composition of bodies described above and con-

[22] Hippocrates (B. C. 359?) thought that the blood was produced in the heart; the phlegma, in the head; the atra-bile, in the spleen; the bile, in the liver. After Galen (A. D. 200?), the liver was considered the factory of all the humors.

sidered temperament as the disposition of bodily organs, differing with different individuals, can be seen in the following passages, a few among many:

Whence it is apparent that the whole activity of inferior nature terminates in man as its most perfect being. For we see that the operation of nature proceeds gradually from simple elements, by mixing them, until it arrives at the most perfect kind of mixture which is in the human body.[23]

There is one kind of humidity which has some definite form according to which it is included among the parts of the body, as are blood and the other three humors, which nature has ordained to the members, which are generated from them.[24]

To the third objection, I say that just as the elements are on the way to generating with respect to mixed bodies, since they are their matter, not however, in such a way that they are always in a state of transition in the mixed body, so also are the humors in relation to the members.[25]

For touch perceives those things of which it is necessary that the animal body be composed, namely, heat, cold, moistness and dryness.[26]

Seeing that the temperament is something set up by contrary qualities as a kind of mean between them, it cannot possibly be a substantial form; because substance has no contrary, nor is it a recipient of more or less.[27]

A body is not necessary to the intellectual soul by reason of its intellectual operation considered as such; but on account of the sensitive power, which requires an organ of equable temperament. Therefore the intellectual soul had to be united to such a body and not to a simple element, or to a mixed body in which fire was in excess; because otherwise there could not be an equability of temperament. And this body of an equable temperament has a dignity of its own by reason of its being remote from contraries.[28]

This therefore must be the disposition of the body to which the rational soul is united, namely that it should be of the most even temperament.[29]

For there is a certain natural disposition demanded by the human species, so that no man can be without it. And this disposition is natural in respect of the specific nature. But since such a disposition

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[23] *Q. D. De Anima*, a. 8.
[24] *IV Sent.*, d. xliv, q. I, a. 2.
[25] *Ibid.*
[26] *De Anima, loc. cit.*
[27] *Summa Contra Gentiles*, II, lxiii.
[28] *Summa Theol.*, I, q. lxxvi, a. 5, ad 2um.
[29] *De Anima., loc. cit.*

has a certain latitude, it happens that different grades of this disposition are becoming to different men in respect of the individual nature.[30]

It is not possible that the diversity of souls be explained in the same way we explain the different degrees of the angelic nature, since all the rational souls are of the same species, and do not differ except numerically. Now all such diversity comes from matter and therefore since the soul does not contain intrinsically any matter, it is necessary that the diversity and distinction of souls be caused by the diversity of their bodies; so that as the temperament of the body would be more perfect, a more noble soul would be imparted to it, since everything is received according to the disposition of the receiver.[31]

For mixture, the activity of active and passive qualities is required; and according to the predominance of one or the other, mixed bodies have a different temperament; which must be said of the body.[32]

To define temperament as the disposition of bodily organs particularly from the viewpoint of the effect on the individual psychical and morphological characteristics is somewhat of a concession to the modern acceptation of the word. The older writers used the word *complexio* to signify the disposition of the organs in themselves without regard to any particular viewpoint. But most frequently, perhaps, it was used in connection with psychical characteristics. The point of interest is that the older writers did actually consider *complexio* as having a determining effect upon the individual psychical characteristics, and as being the dispositive cause of all such characteristics, intellectual as well as sensitive. That St. Thomas, following Aristotle, considered it as such is apparent from the following passages, again, only a few among many. Later we shall consider some of St. Thomas' ideas as to the effect of particular types of temperament upon psychical characteristics; here we will glance at his more general views.

In general, all individual psychical dispositions depended upon the individual bodily disposition: " . . . the diverse dispositions of men toward the operations of the soul come from

[30] *Summa Theol.*, I-II, q. li. a. 1.
[31] *II Sent.*, d. xxxii, q. II, a. 3.
[32] *IV Sent.*, d. xliv, q. II, a. 1.

the diverse disposition of the body." More in particular, the perfection of the whole sensitive nature depended upon the perfection of the temperament, by the following process of reasoning. Since touch is the foundation of all the other senses, the perfection of the whole sensitive nature depends upon the perfection of touch. " While there are many senses, there is one, however, which is the foundation of the others, namely, touch, in which the whole sensitive nature principally consists." [34] " Hence from the fact that one has a better sense of touch, it follows that he has in general a better sensitive nature." [35] But the perfection of touch depends upon the equability or perfection of temperament. " Goodness of touch depends upon the equability of the temperament." [36] Therefore the perfection of the whole sensitive nature depends upon the perfection of temperament.

The quality of the internal senses depended upon the temperamental disposition of the brain: " . . . for the good quality of the internal sense faculties such as imagination, memory and the cogitative power, a good disposition of the brain is necessary." [37] The characteristic affective or emotional tendencies flowed, on the material side, from the individual temperament: " . . . by temperament, some are more prone than others to desire or anger." [38]

> For they (the passions) are ascribed to the temperament as causing a disposition, and in respect of that which is material in the passions, for instance the heat of the blood and the like.[39]
>
> And if we consider the nature of the individual, in respect to his particular temperament, thus anger is more natural than desire; for the reason that anger is prone to ensue from the natural tendency to anger, more than desire, or any other passion, is to ensue from a natural tendency to desire, which tendencies result from a man's individual temperament.[40]

But on the part of the body, in respect of the individual nature, there are some appetitive habits by way of natural beginnings. For

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[33] *De Memoriæ et Reminiscentia*, lect. 1.
[34] *Q. D. de Anima, loc. cit.*
[35] *II De Anima*, lect. xix.
[36] *II Sent.*, d. xxxii, q. II, a. 3.
[37] *Q. D. De Anima, loc. cit.*
[38] *Summa Contra Gentiles*, II, lxiii.
[39] *Ibid.*
[40] *Summa Theol.*, I-II, q. 46, a. 5.

some are disposed from their own bodily temperament to chastity or meekness or suchlike.[41]

The intellectual qualities characteristic of an individual depended upon the better or worse dispositions of his internal senses, which in turn depended upon his individual bodily temperament:

Experience shows that some understand more profoundly than do others; as one who carries a conclusion to its first principles and ultimate causes understands it better than the one who reduces it only to its proximate causes.[42]

The understanding of principles results from man's very nature, which is equally shared by all. Nevertheless the truth of principles is more known to one than to another, according to the greater capacity of intellect.[43]

. . . and the fact that men understand unequally comes from the diversity of the sensitive faculties from which the species are abstracted; and this likewise comes from the diverse disposition of bodies.[44]

. . . men are observed to be more or less apt for the considerations of sciences according to the various dispositions of the cogitative and imaginative powers.

But this aptitude depends on these powers as on remote dispositions, in the same way as it depends on perfection of touch and bodily temperament.[45]

. . . the diversity of temperaments causes a better or less good faculty of understanding by reason of the faculties from which the intellect abstracts; which are faculties using corporal organs, as imagination, memory and the like.[46]

. . . thus because some men have bodies of better disposition, their souls have a greater power of understanding . . . for those in whom imaginative, cogitative and memorative powers are of better disposition, are better disposed to understand.[47]

. . . and thus, physicians are able to judge of a man's intelligence from his bodily temperament, as a proximate disposition thereto.[47a]

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[41] *Ibid.*, q. 51, a. 6.
[42] *Summa Theol.*, I, q. 84, a. 7.
[43] *Ibid.*, q. 98, a. 1.
[44] *Q. D. De Anima*, a. 7.
[45] *Summa Contra Gentiles*, II, lxxiii.
[46] *Q. D. De Anima*, a. 5, ad 2um.
[47] *Summa Theol.*, I, q. 85. a. 7.
[47a] *Summa Contra Gentiles*, III, lxxxiv.

As to individual volitional characteristics, since according to St. Thomas the will is simply the appetitive quality of the intellect, it would follow that volitional qualities would also be influenced to some degree by the intellectual qualities; hence also by the sensitive and affective dispositions, hence by the individual temperament.

Most of the above expressed ideas of St. Thomas were based upon the doctrines of Aristotle, of which we will see more later. Hence it is clear that for both Aristotle and St. Thomas temperament was the innate, characteristic structure and functional disposition of the bodily organs and tissues and that this disposition, differing in different men, exercised a profound determining effect upon all the characteristic sensational, emotional, intellectual and volitional qualities of an individual. That they also considered morphological characteristics as stemming from the individual temperament follows from their notions as to the effect of *complexio* upon the bone structures, limbs, etc., and passages may be found in their writings dealing with this aspect of temperament. For the complexus of psychical characteristics considered in themselves, the older writers used no one word such as " character," but spoke simply of better or worse powers of imagining, remembering, understanding, different dispositions in the faculties of the soul, etc. It is evident, then, that the notions as to the nature of temperament presented in recent years by the endocrinologists are by no means new " discoveries of science," but merely represent a return to the fundamental ideas of ancient and medieval scholars such as Aristotle and St. Thomas, with whom they are, at least basically, in close accord on this point.

II. The Causes of Temperament

In a sense, the above title is, to say the least, a presumptuous one. If temperament is a matter of the structure and functional disposition of the organs of the human body as they affect psychical characteristics, and if by " causes " we have in mind a complete synthesis of all the material, formal, efficient and

final causes, to answer adequately the question, " What are the causes of temperament? " would be a feat requiring the combined efforts of all the disciplines of chemistry, biology, anatomy, medicine, philosophy, and, for that matter, theology. If we restrict the question to its purely chemical and biological aspect and ask, " What is the exact chemical formula of each of the bodily organs, what are all the functions of each and how and why and when does each one function? " we would be asking something about which even these sciences know comparatively little. If we limit the enquiry still further and ask, " What are the chief chemical and biological factors in the differentiation of one individual's physiological and psychical make-up from that of another? " we are restricting the issue somewhat but at the same time greatly complicating it by extending our enquiry to the psychological aspects of the question. But if we ask this same question, as we must, from the viewpoint of chemistry, biology and psychology, the answer would have to be somewhat along these lines: " There are probably many such factors. Some are fairly demonstrable, others much less so: some are only suspected and still others perhaps, which are as yet completely unknown." Of the " fairly demonstrable " group we might ask, " Which, if any, is the factor that empirical investigation has indicated as probably the most influential single physiological factor in the differentiation of individual organic dispositions as they affect individual psychical characteristics? " To this question the endocrinologists answer—some confidently, some hesitatingly—" The secretions of the endocrine glands." To the same question, the ancients and medievalists answered, centuries ago, " The four humors of the body." A consideration of these respective answers forms the subject matter of the present discussion and indicates the sense in which its title is to be taken.

1. *The Teaching of the Endocrinologists.*

A gland is defined by Wolfe as " an aggregate of cells which has for its purpose the transformation of substances abstracted from the surrounding blood or lymph, into specific compounds,

generally useful in allowing some part of the body to perform one or more functions adequately." [48]

Glands are of two kinds: duct glands, which dispose of the compounds they have manufactured by pouring them out onto some body surface by way of a duct; and ductless or endocrine glands, which deliver their manufactured secretions directly into the blood stream, or the lymph, which distribute them to the bodily organs as they are needed. Examples of duct glands are the sweat glands, secreting perspiration, and the lachrymal glands, manufacturing tears. The principle ductless or endocrine glands, also called glands of internal secretion (hence the name " endocrine," from the Greek " endo " (within), and " krenein " (to separate), are the pituitary, located on the undersurface of the brain; the thyroid, situated in the lowermost portion of the anterior neck; the parathyroids, immediately behind and connected with the thyroid; the pancreas, in the abdomen, close to the posterior wall; the adrenals, just above the kidneys; and the gonads, in the sexual organs. (These last, the gonads, in addition to their endocrine function have also a duct gland function required for reproduction. The pancreas also elaborates an external secretion, the pancreatic juice.) There are a number of other glands about whose classification as " endocrines " authorities disagree, since little is known about their precise secreting function. Of these we will see more later. The particular functions of some of the major endocrine glands we will discuss more in detail. Here we will simply note some general aspects of their function.

Each endocrine gland elaborates at least one secretion; some, e. g., the pituitary and the gonads, elaborate several different secretions. While a particular name has been assigned to most of the endocrine secretions, the generic name applied to all of them is " hormone," a term proposed by two English physiologists, Bayless and Starling, in 1902. The term was accepted by the medical profession as most descriptive of the general

[48] William Wolfe, M. D., *Endocrinology in Modern Practice* (Philadelphia, 1939), p. 18. (Quotations from this work are printed by special permission of the publishers, W. B. Saunders Company.)

function of the endocrine secretions, which is to set in motion and regulate the functioning of all the cells, tissues, and organs of the body by stimulating their proper activity here or retarding it there, as necessity demands, thus maintaining a proper balance or coordination among the functions of all the various parts of the organism. As Dr. Wolfe says:

> In the body the different degrees of life activity and capacity for work of the various cells can be utilized only if a carefully planned system of controlling influences accelerates activity here and retards it there thus keeping the machinery running smoothly. It is true that the individual organs are capable of independent life and action of their own, as seen in experimentally extirpated tissues. A human being is not, however, a conglomeration of organs but an intricate system of interactions between these components, each supplying certain needs to the others. It is the endocrine glands which are charged with the task of coordinating the speed with which every cell in the body performs its duty. These little organs can sense any change of environment which requires tissue response, and they react immediately by sending out impulses or hormones to the appropriate organs whose functions must be accelerated. The hormone reaches a specific tissue and there assists in the occurrance of certain biochemical or biological phenomena.[49]

Thus the hormones, which are themselves chemical compounds, perform their regulating and balancing function by stimulating " chemical changes in all the cells of the body." [50]

Hence their influence is widespread and dominant. " The products of each gland are taken up directly by the circulation and carried to all the parts of the body where they exert specific influences upon all its structures and most of its functions." [51] " Their effects are so widespread that no organ or even part of an organ can escape their dominating influence." [52] They " influence the vital and fundamental processes of life such as reproduction, growth and metabolism." [53]

[49] *Ibid.*, p. 19.

[50] Samuel A. Loewenberg, M. D., *Clinical Endocrinology* (Philadelphia, 1941), p. 321. (Quotations from this work are printed by special permission of the publishers, F. A. Davis Company.)

[51] *Ibid.*, p. 19.

[52] Wolfe, *op. cit.*, p. 15.

[53] Loewenberg, *op. cit.*, p. 18.

It is chiefly through their control of the metabolic processes that the hormones affect the structural disposition of the organs, since it is by reason of metabolic activity that the various cells, tissues, and organs are enabled to assimilate properly the nutrient elements essential to their formation and determinative of their structure and growth, both *in utero* and throughout life. It is in the intra-uterine formative stages that the hormones exert their greatest influence upon the innate structure of the organs and tissues upon which their whole physiological future depends to a great extent. As Berman says:

. . . . . We know that the endocrines rule over growth and nutrition, a vast dominion which incorporates every organ and every tissue. By enhancing or retarding the nutritional changes, the growth of the organ or tissue is favored or restricted.[54]

. . . undoubtedly they (the endocrine secretions), initiate the marvelous unfolding of tissues and functions, organs, and faculties summed up as development or differentiation.[55]

In their ensemble, the glands of internal secretion wield a determining influence upon the development of the individual from his very inception. If his various powers may be conceived of as an orchestra, they may be said to conduct it from the very beginning of its movements, and to cease only with its termination. From the moment when the spermatozoon penetrates and fecundates the ovum, the fate of the future being is settled by their disposition. The seal of his destiny is soaked with their substance. They act before he is born as well as after.[56]

Every human body starts out as a single cell, the fertilized ovum, capable of carrying on in itself all the processes necessary for its continued existence and reproduction. This single cell divides and becomes two cells; each one of which again divides into two more cells, and so on. As this process of division and multiplication continues, the groups of cells

. . . organize themselves in such a manner that they delegate certain activities to other cells, assuming in exchange the burden of

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[54] Berman, *op. cit.*, p. 151.

[55] *Ibid.*, pp. 59-60.

[56] *Ibid.*, p. 147.

carrying out other functions for their coworkers. This process of specialization continues to a greater and greater extent, until all the cells lose their capacity to carry on certain of the activities essential to life, but become infinitely more efficient in others. They lose their capability of independent existence, although potentially they are still endowed with all the attributes necessary for independent life.[57]

In this way, the various organs and tissues of the body are formed from the numerous cell groups and when sufficiently formed, begin to carry on their own individual functioning. This process is controlled and influenced to a great extent by the amount and quality of the nutriment received from the mother's body by osmosis or absorption through the wall of the uterus and passed to the embryo through the umbilical cord by which it is attached to the placenta. The quantity and quality of the endocrine secretions received by the embryo from the mother's body exert a dominant influence on the multiplying and group-organizing activities of the cells and upon the formation of the embryonic organs. Any undue over- or undersupply of any of these secretions has a profound effect upon the cellular activity and thus upon the structures of the cells and organs formed thereby, especially upon the formation of the endocrine glands of the embryo itself. When these latter have reached the functioning stage, their future has already been determined to a great extent not only by the predispositions inherited from the parents through the genes, but also by the amount and quality of the secretions received from the mother's body after conception. When the first endocrine glands of the fetus begin to function, they themselves commence to exercise a determining influence upon the other embryonic glands, organs, and tissues. It is easy to see here the important role played by the hormones in the determination of the peculiar organic structure and functional dispositions characteristic of an individual. It is particularly at this stage that, according to the endocrinologists, the various physiological " types " are determined, chiefly by an over- or undersupply of

[57] Wolfe, *op. cit.*, pp. 18-19.

one or more particular hormones, with its resulting effect upon the physical characteristics of the whole organism. The thyroid, for instance,

> . . . determines the embryonic etchings of the different organs which in their totality comprise the unique and individual.
>
> Every human being, like every multicellular animal, must first have existed as a single cell, the impregnated ovum. With the body and personality of the ovum, the creature is one and continuous, literally something the single cell has made of itself by subdividing and differentiating . . . we know that there is an orderly progression of events, a propagation of cells, a forward going arrangement of chemical reactions that results in expansion and intricate complication of the organism.[58]
>
> A vast number of observations gathered by laboratory experimentalists as well as by those naturalists of the abnormal, physicians in active practice, prove that the construction of the individual both during development before maturity, and maintenance during maturity, his constitution, in short, is directed by the endocrine glands. It is possible now to present an explanation of the individuality of the individual.
>
> To assert that variation is responsible for the individual, that it is the mechanism which isolates him as a being like none other of his fellows, not even his parents, brothers and sisters, is merely to beg the question. What is variation? The internal secretion theory of certain variants is an explanation that is coherent and comprehensive, based upon concrete and detailed observations. It provides an adequate interpretation of numberless hereditary gradations and transitions, blendings and mixtures.
>
> In the pure types, only one gland, either by being present in great excess above the average, or by being pretty well below the average, comes to exercise the dominating influence upon the traits of the organism. As the strongest link in the chain, or as the weakest, it rules. The others must accommodate themselves to it. Among them as commanders of growth, development, and normal function, it holds the balance of power. In every emergency it stands out by its strength or by its weakness. It thus creates its own types of man or woman, with attributes and characteristics peculiar to itself.[59]

The endocrine system as a whole is a very complicated affair. Beside the manifold functions of each gland and each hormone,

[58] Berman, *op. cit.*, pp. 59-60.

[59] *Ibid.*, pp. 148-149.

there is an intricate interplay between the hormones of one gland and those of another. Some are synergistic to others, some antagonistic; some accelerate the activity of others, some retard it; some compensate for the deficiency of others, etc., so that an almost infinite number of combinations, " blendings and mixtures," are possible. Hence while one gland may dominate an individual's physiology and determine his " type," nevertheless, within each " type " countless degrees and gradations are possible, even within the range of " normal." Moreover the " pure types " spoken of by Berman, are actually rarely found. Most individuals represent a combination of various types, due most probably to the relative predominance of several glands in their physiological economy. However, in each individual there is usually a sufficient predominance of the characteristics of one type to enable trained observers to determine his position in the type categories.

The study of the glands of internal secretion, then, has led the endocrinologists to the conclusion that these glands, taken as a whole, are in all probability the most influential single factor in the determination of physiological individuality. That this physiological individuality is the basis of psychical individuality is a conclusion that has been more or less forced upon them by observation of the effects produced by the endocrine secretions on the psychical characteristics. These effects have been noted especially in endocrine pathologies where an abnormal under- or oversecretion of some particular hormone, due to congenital malfunction of the gland, gland infection, tumors, injuries, etc., has been accompanied by notable changes in psychical qualities. In confirmation of these observations innumerable experiments have been performed on both animals and human beings, in which injections of hormones, natural or synthetically manufactured, partial removal or transplantation of various glands, etc., have been found to produce psychical effects similar to those noted in endocrine malfunctions. From these observations in abnormal conditions, the endocrinologists have been led to the observation of variations in the psychical characteristics of " normal " individuals, resulting from normal

variations of secretion, for as Berman says, "The difference between normal and abnormal is only a matter of degree."

Pende thus sums up the general means whereby these empirical data have been accumulated and applied to normal temperaments.

> We shall now briefly point out these various endocrine temperaments, which have been discovered for the most part by the constitutional study of endocrinopathic subjects in the period that preceded the appearance of definite glandular disease and in the period that followed its apparent clinical cure; also by the study of endocrinopathics whose families have members with all degrees of functional change of the same endocrine gland as that which is affected in the patient; by the study of hyperfunctional or hypofunctional symptoms presented by the endocrine glands under certain physiological conditions of the organism which demand greater work from certain glands, as happens at puberty, during pregnancy, in the menstrual cycle and at the menopause, under which conditions various hypoendocrine or hyperendocrine temperaments are easily revealed. Finally, these different endocrine temperaments are shown by the comparative study of the morphological and functional signs of certain constitutions, with manifestations that can be experimentally and clinically provoked by the administration of glandular extracts or by the partial functional suppression of the endocrine glands.[60]

We might note, at this point, that one of the most important media through which the endocrine secretions have been found to affect the psychical qualities is the nervous system. In other words, psychical individuality, in many of its phases, has been found to be closely correlated with the individual, characteristic structure and functional dispositions of the nervous system in general, which dispositions, in turn, have been conditioned largely by the endocrine glands, both in the formative stages in the embryo and in the post-natal maintenance, development and reactivity of the nervous system. From the viewpoint of function, the tie-up between psychical characteristics and nerves is due to the fact that most psychical activity is either stimulated by, accompanied by, conditioned by, or in some way

[60] Pende, *op. cit.*, p. 228.

depends upon some form of nervous activity. The tie-up between the nerve activity and the endocrine glands is due to the fact that the nervous system and the endocrine system are so intimately correlated as to be inseparable at any functional moment.

The second fundamental criterion which we must adopt in our constitutional analysis is that of the functional examination of each separate apparatus, but most of all, that of the one great apparatus—the neuro-endocrine—which by unanimous consent of all our best modern constitutionalists serves to establish a vital neuro-chemical coordination, a neuro-chemical consensus between all the parts and all that is most characteristic and personal in the constitution.[61]

Both when devising the fundamental problems of endocrinology in the experimental field, and when studying pathological anatomy and many endocrinopathies, it was soon observed, and time has confirmed this notion more and more, that the humoral (i. e. endocrine secretional) correlation cannot be considered as a mechanism independent of the nervous correlation, but must be considered as parallel to it and more than parallel; they are intimately interwoven for their separation is impossible at any functional moment.[62]

. . . the secretions of these glands (the endocrines) influence profoundly the activities which are under control of the autonomic nerves and incidentally also those influenced by the voluntary nervous system with all its implications. A change in the hormono-autonomic mechanism must have its reciprocal effect upon those organs or tissues which are controlled by the affected gland and its related nerve mechanism.[63] It has been said that the sympathetic nervous system is the keyboard upon which the endocrines play.[64]

The most ultra-microscopic activities of the molecules and atoms in the highest nerve cells and nerve tissues are dominated. The speed of their chemistry and their associations and thus the speed of thought are regulated (by the internal secretions).[65]

Later we will consider some of the particular psychical characteristics attributed to particular hormones. Here we will

[61] *Ibid.*, p. 64.

[62] G. Marañon, M. D., *Problemas Actuales de la Doctrina de las Secreciones Internas* (Madrid, 1922), p. 12.

[63] Wolfe, *op. cit.*, pp. 747-48.

[64] *Ibid.*, p. 732.

[65] Berman, *op. cit.*, p. 200.

simply quote a few of the summary statements of the endocrinologists as to the effect upon these characteristics of the endocrine secretions in general. The terms " mind " and " mental " are often used by them in a broad sense to include all or most of the psychical functions, intellectual, emotional, imaginative, etc.

It is impossible to review here in detail all the facts accumulated concerning the influence of the internal secretions upon all the processes of mind, intellectual and emotional. A volume would not suffice for their adequate consideration. Reflexes, instincts, habits, tendencies and emotions are involved in their machinery. The development and normal functioning of the intellectual and emotional functions are controlled by them. Acuteness of perception, memory, logical thought, imagination, conception, emotional expression or inhibition and the entire content of consciousness are influenced by the internal secretions.[66]

The most modern study of the relations between the hormones and the degree of mental development, proves in the most convincing manner the first class regulative influence, that the hormonic pattern exercises upon the formation of what we call character, that is, upon the determinants of the different forms of feeling, thinking, and acting that characterize different men.[67]

In view of the function that the hormones, in collaboration with the nervous apparatus of the vegetative life, exercise in establishing the correlations between all the parts of the organism and between the somatic and psychic aspect of the individual personality, and hence, in view of the preponderant part which these play in the determination of the somatic-psychic constitution, we can understand how congenital and hereditary inadequacies and anamolies of the endocrine system come to occupy a very high place in modern constitutional pathology.[68]

The influence of the endocrine glands upon the rate of all bodily and mental processes concerns every medical specialist, but more particularly the neurologist and psychiatrist. Even before a child is born, its nervous and mental make-up is determined in great part by the endocrine factors inherited from its parents, which endow it with normal or abnormal mental power, facility in nervous reaction, etc. Throughout life, the mind and nervous system remain reflectors of the state of the endocrine glands. . . .

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[67] S. Distefano, *Endocrinologia* (Turin, 1929), p. 345.

[68] Pende, *op. cit.*, p. 222.

[66] *Ibid.*

. . . the degree of emotional stability and the mental and emotional reaction to the stimuli which bombard each individual through every hour of the day are all, to a considerable extent, under endocrine control.[69]

Without going into detail, as yet, as to the anatomy of particular glands and the various functions of their respective secretions, we will give here a few typical instances to illustrate the way in which the endocrinologists explain how the endocrine secretions affect psychical activities and determine psychical characteristics. First in the emotional sphere; and, in particular, with regard to fear and anger. When an individual comes in contact with some strong fear-arousing stimulus, the medulla section of his adrenal glands immediately increases the output of its hormone, " adrenalin " (sometimes called adrenin). This increased supply is picked up by the blood stream or the lymph and quickly carried to various nerve centers, nerve endings, etc., throughout the body. The perception by the " associative memory " of the sensations arising in the various organs and tissues as they react to this increased supply of adrenalin, constitutes according to Berman, the emotion of fear. Some of the internal functions affected by the increase of adrenalin are the blood pressure, heart beat, respiration, etc. The outward manifestations of these organic changes may be paleness, trembling, twitching of the limbs, quick or gasping breath, twitching of the lips, etc. Experimentally these same effects can be produced by intravenous injections of a sufficient amount of adrenalin, which, by the way, should also produce the emotion of fear, if Berman's assumption is correct that fear consists wholly in the perception of bodily changes. Apparently, however, the injected adrenalin produces only the symptoms of fear, not the emotion itself. This may be due, in the hypothesis, to a different attitude of the " associative memory " during such experiments.

The various degrees of change in the organs and tissues affected, and hence, in Berman's hypothesis, in the amount of fear felt, as well as in its outward manifestations, would depend

[69] Wolfe, *op. cit.*, p. 732.

upon several factors: first, the amount of adrenalin released. This would depend upon the degree of susceptibility or reactivity of the adrenal glands to a stimulus of given intensity, which would be relayed to it, through the nervous system, from the organs involved in the perception of the fear-arousing object. This degree of susceptibility would depend upon the structure and functional disposition of the medulla of the adrenal gland itself, which would in turn depend upon its congenital condition, which would again depend to a great extent upon heredity, the supply of hormones furnished by the parent body, etc. Hence the degree of susceptibility or proneness to fear and the amount of fear felt in a given instance would, other things being equal, vary in different individuals according to the variations in the temperamental disposition of their adrenal glands. Another factor would be the susceptibility or reactivity of the other organs and nerves affected to the increased adrenalin supplied to them. This would depend on their structure and functional disposition, which would in turn have been conditioned congenitally by various hormones.

Already we have an example of the complexity of interaction and interrelation in the endocrine system. But this is not all. An individual's characteristic way of acting when frightened would also depend upon the adrenal glands. The interconnection between the whole endocrine system is so close that a change in the rate of secretion by one gland affects all the other endocrines by either inhibiting or accelerating their functioning, which results in a disturbance of the equilibrium of the whole organism. Adrenalin, e. g., disturbs the inter-muscular equilibrium in such a way as to tense the flexor muscles (the muscles of flight), and relax the extensor muscles (the muscles of attack).[70] Hence an individual secreting a large amount of adrenalin would be more inclined to flee than to attack when frightened; one secreting only a small amount might be more or less paralyzed when frightened and hence would be inclined neither to flight nor fight. However, if the cortex section of

[70] Berman, *op. cit.*, p. 210.

the adrenals pours into the blood enough of its hormone, " cortin," to overcome the effects of the lack of medulla secretion, the inter-muscular equilibrium is disturbed in the opposite direction, i. e., for fight rather than flight, and anger results. " Or if," says Berman, " the cortical section pours in an overwhelming amount of its secretion from the first into the blood, there will be no fear but anger immediately. Habitually charging and fearless animals, like the bison, bull, tiger, or lion, possibly have relatively larger adrenal glands. Habitually fleeing and fearful animals, like the rabbit, have a small cortex and a wide medulla in their adrenals.[71]

Courage, as a human trait, says Berman, is closely related to fear and anger, but involves besides an act of volition. But even to this he would give an endocrine basis. " Admitting that without the adrenals such courage would be impossible, the chief credit for courage must be ascribed to the prepituitary. It is the proper conjunction of its secretion and that of the adrenals that probably makes for true courage. A prerequisite for adequate prepituitary function is a normal secretion of the interstitial cells of the reproductive glands. Cowardice is said to be a characteristic of eunuchs." [72] An individual's mental reaction in emergency would also be influenced by the state of his adrenal glands, but particularly by the secretional disposition of his thyroid, the gland which empirical observation has established as being closely related to the speed of thought. Iodine, the chief constituent of " thyroxin," the thyroid hormone,

> . . . has been shown to increase the electric conductivity of the brain, that is, the rate at which electrons will fly through it. The thyroid may then be regarded as manipulating the amount of iodine brought to play upon the brain cells at a particular moment of danger or exaltation. Adrenalin increases the electric conductivity of the brain. Nerve impulses, and with them sensations and ideas, travel faster or flow more quickly through iodinized or adrenalized brain cells. In dangerous situations we think more rapidly and keenly, for in emergencies the blood floods the brain with extra thyroid and adrenal secretions.[73]

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[71] *Ibid.*, p. 210. [72] *Ibid.*, p. 211. [73] *Ibid.*, p. 200.

Here again the degree of brain activity in emergency would be influenced by the temperament of the adrenal and thyroid glands, by the degree of reactivity of the brain cells to these secretions, etc. Individuals with characteristically poor adrenal or thyroxin secretion might tend to " go blank " in an emergency.

In the intellectual sphere in general, some mental characteristics are attributed to thyroid secretion, others to the secretion of the frontal lobe of the pituitary, i. e., the prepituitary, which is quite similar to the thyroid in regard to the effects of its hormones, one of which has an accelerating effect on the thyroid itself. Speed of perception, memory, judgment, and reasoning depends to a great extent upon thyroid secretion, says Berman; accuracy of thought and " coordinating ability " depend on the prepituitary secretion.

There is an element of judgment, in reasoning, as in perception and memory. And as in the latter, the thyroid determines the velocity. Quick thinking, as we call it, means good thyroid action, and slow thinking deficient thyroid action. The other element in judgment, accuracy, is influenced by the prepituitary. During adolescence there is a physical growth which consumes most of the secretion of the prepituitary. After adolescence, after the early twenties, when physical growth has ceased, the pituitary secretion seems to sensitize the cells of the brain to mental growth. The reaction potential of the pituitary, that is, its inherent, latent ability to supply a maximum of its endocrine for the nerve cells of the frontal lobes, is a chemical determinant of mental genius. It makes for the greatest coordination of experience, knowledge, information, tastes, and problems into one harmonious whole. And curiously, not only does it cause a fusion of intellectual material, it creates a desire for and a love of such material.

We should expect to find extraordinarily well-developed prepituitary action among eminent philosophers and men of science, and we do. Adequate action of it is present throughout the range of normals who evidence sufficiently ripened judgment as they progress through life. The ability to profit by experience, and to make more and more accurate judgments as one grows older implies at least a maximum efficiency of it. This maturation is not at all universal. Even after middle age, after forty and fifty years of reasoning, some individuals retain the juvenile mind of their youth. Like the Bourbons, they have learned nothing and forgotten nothing. Their prepituitary insufficiency, often coupled with a postpitui-

tary excess, and other instabilities and disequilibriums in the endocrine system, render them immature morons, compared with what might be expected of them for their years. They are people who are old enough to know better. For the same reasons inhibition and emotional control are poor in them.[74]

To just what extent each individual step in such explanations has been verified by empirical observation and experiment, is difficult to say. Not all the endocrinologists would be as willing as Berman is to assert definitely that particular kinds of intellectual acts can be attributed to particular hormones. However it is quite generally admitted even outside the school of the endocrinologists that mental ability in general corresponds to the characteristic supply of tyroid secretion. Also the general activity of adrenalin in fear and anger has been quite well established by physicians and scientists other than those coming under our classification of " endocrinologists "; for instance Walter B. Cannon, who summarizes his experiments, observations and conclusions in his book, " Bodily Changes in Pain, Hunger, Fear and Rage." [75] But whatever validity such conclusions might have in the physiological and phenomenal order, to give, for instance, the speed of electrons flying through the brain cells as an adequate and complete explanation of mental ability is certainly gratuitous and must inevitably lead to materialistic interpretations of psychical phenomena, unless something more is known about the nature of the intellect and its functional relations to the organic brain.

From the above accounts of the part played by the secretions in emotional and intellectual processes, one might suspect the relation considered to exist between the endocrine secretions and " character," which for the endocrinologists, includes, as we have noted, the modifications brought about in the innate psychical characteristics by extraneous influences. The number and kinds of stimuli with which an individual would most frequently come in contact would depend to a great extent upon

[74] *Ibid.*, pp. 215-216.

[75] Walter B. Cannon, M. D., *Bodily Changes in Pain, Hunger, Fear, and Rage* (New York, 1929).

his environment, education, etc. From being frequently called upon to respond to particular kinds of stimuli, the endocrine glands themselves would become more or less habituated to reacting along certain lines; some glands would be called upon more frequently than others and to a greater extent in one individual than in another, etc., always, however, in proportion to their native temperamental dispositions. This would have its repercussions in the entire endocrine system whose characteristic equilibrium would be modified along certain definite lines. The physiological modifications might result, to some degree, in corresponding modifications of innate psychical characteristics, but again only down to the level of and in proportion to the innate, characteristic temperament. The possibility of countless combinations, interactions, and interrelations in the entire physio-psychical apparatus takes on a dizzying complexity. However, the most influential factor in the entire mechanism would be the over- or undersecretion characteristic of the gland most dominant in an individual's physiological make-up. Says Berman:

A man's nature is chemically his endocrine nature. Primarily, when he is born, he represents a particular inherited combination of different glands of internal secretion. They, constituting the inventory of his vital stock in trade, start his life. Afterwards food, the routine of his existence, education, disease, and misfortune, in short, environment, modify him because they modify his ductless glands and his vegetative apparatus as well as his brain, depressing some parts and stimulating others, and so rearranging the system. In particular will he be transformed as the gland is affected which is the center of the system to which the others adapt and accommodate themselves. The inertia of the system is very great, almost absolute, and always tends to return.[76]

Choices, the psychology of selection of food, color, friends, mates, amusements also become explicable rationally. For conflicts among the different components of the vegetative system are continuous and inevitable. If the pressure within a viscus has been heightened and persists, that is, is not disturbed by some other associated factor or instinct, conduct results to lower the pressure to what it was before the instigator of the tension appeared. But if another

[76] Berman, *op. cit.*, p. 202.

instinct is sparked, or another associated factor comes into play, another focus of increased pressure within the vegetative system is created, with another stream of energy flowing to the brain and demanding an outlet. This clash of instincts, the struggle between different foci of the vegetative system competing for the possession of the brain, is a common everyday process in conduct. Which will win means which will will. And so we have an energetic basis for volition.

Which will win appears to depend primarily upon the kind of endocrines that predominate in the make-up of the individual, secondarily with his education. For it is the endocrines that are really in conflict when there is a struggle between two instincts. And if one endocrine system conquers, it must be either because it is inherently stronger, its secretion potential, that is, the amount of secretion it can put forth as a maximum is greater (so explaining the term dominant), or because a past experience has conditioned it to respond, although the opposing endocrine system does not.

The response of the ductless glands to situations varies with their congenital capacity, and acquired susceptibility. Capacity is a question of internal chemistry, modifiable by injury, disease, accident, shock, exhaustion. Susceptibility depends upon the play of the forces focusing upon them what may be summed up as associations. In the ability of one endocrine system to inhibit another we have the germ of the unconscious. Hence the modus operandi of the repressions and suppressions, compensations, and dissociations, which may unite to integrate or refuse to integrate, and so disintegrate and deteriorate a personality.

As the personality develops, the vegetative system becomes susceptible to manifold associates of family, school, church and society, art, science and religion, and last but not least, sex. All the different nuances of personality are expressions of a particular relationship, transitory or permanent, between the endocrines and the viscera and muscles. Conversely, behavior shows what a person actually is chemically; that is what endocrine and vegetative factors predominate in his make-up.[77]

Notice here, among other things, how the will, though admitted to be the deciding factor in the matter of choices and character, is summarily explained away by being surreptitiously reduced to a mere phase of the functioning of an individual's dominant endocrine.

[77] *Ibid.*, pp. 208-9.

These, then, are some of the high-lights of the endocrinal theory as to the causes of temperament, i. e. of the individual physiological disposition from the viewpoint of its effect on the psychical characteristics. The main basic features of the whole theory have been thus summarized by Berman:

1. The life of every individual, in every stage, is dominated largely by his glands of internal secretion. This is, they, as a complex internal messenger and director system, control organ and function, conduct and character. The orderliness of human life, in the sequential march of its episodes, crises, successes and failures, depends, to a large extent, upon their interactions with each other and with the environment.

2. One or several of the glands possesses a controlling or superior influence above that of the others in the physiology of the individual and so becomes the central gland of his life, its dominant, indeed, so far as it casts a deciding vote or veto, in its everyday existence and incidents as well as in its high points, the climaxes and emergencies.

3. These glandular preponderances are determining factors in the personality, creating genius and dullard, weakling and giant, Cavalier and Puritan. All human traits may be analyzed in terms of them because they are expressions of them.

4. Specific types of personality may be directly associated with particular glandular prominences, so that we have the thyroid-centered types, the pituitary-centered types, the adrenal-centered types, etc. These are the prototypes in their purity most easily described and recognized.

5. Combinations of these, as well as of other glands—with joint predominance—occur and indeed form the majority of the populations. The phenomena of varieties may be thus in part explained.

6. Internal secretion traits are inherited. The variations in their heredity are essentially the structural representation of the resultant of a parallelogram of forces exerted by each of the parental prepotent glands. If they are of the same type, they may reinforce each other: if not, inhibitions and compensations will come into play. Mendelian laws may apply.

7. (Behold!) The process of evolution, as the play of natural selection upon these variations, becomes comprehensible from a new standpoint.

8. Certain diseases, and disease tendencies, both acute and constitutional, as well as traits of temperament and character, and predetermined reactions to certain recurring situations in life, are rooted in the glandular soils that compose the stuff of the individual.

9. The unconscious, of which the vegetative apparatus is the physical basis, leads back to the internal secretions for the profoundest springs of its secrets. . . .

10. Given the internal secretory composition, so to speak, of an individual—his endocrine formula—and so his intravisceral pressures, one may predict, within limits, his physical and psychic make-up, the general lines of his life, diseases, tastes, idiosyncrasies and habits.

11. Within limits if the previous history of an individual is known, his physical appearance may be approximately described, and his future outlined. (This pertains to the morphological phase of the theory, which we have not discussed.)

12. Conversely, given the physical and psychic composition of an individual, and his past history, one may deduce the internal secretion type to which he belongs.[78]

This theory has been accepted by a large number of modern psychologists, at least as to its broad fundamental postulates, if not as to all the particular conclusions to which some of the endocrinologists would carry it. Most of the objections leveled against it are based on the assertion that not enough is yet known about the endocrine glands to warrant such sweeping conclusions and that the claims of the endocrinologists as to many of its more detailed features have not been sufficiently verified by scientific observation and experiment. To this the endocrinologists say that while much has yet to be learned about the endocrine glands, what has been definitely established is sufficient to serve as a basis for their conclusions. As to how far and to what degree of detail these conclusions can be carried, the endocrinologists are not all in accord. Kretschmer is probably the most restrained; Berman, the most enthusiastic, though it must be remembered that Kretschmer was only a pioneer in the field. In their writings, some of them have a way of so amalgamating what has been definitely established with what is only supposition, that it is practically impossible to detect which is which. In their objections to the theory, some of the modern psychologists have seen and pointed out the discrepancy between the material, biological premises and the immaterial,

[78] *Ibid.*, pp. 145-47.

psychological conclusions in the explanations of the endocrinologists.

Among modern psychologists of the Thomistic school, the theory has been looked upon with favor, at least in its basic outlines, but only as to its validity on the physiological and phenomenal levels. Fr. Barbado, O. P., the eminent experimental psychologist and publisher of many works on the subject, made, in 1926, something of a prophecy in regard to the theory.

> In the first place, the discoveries of the anatomical and physiological sciences demonstrate more clearly every day the influence of the nerve organs on all the psychical functions, and the work accomplished in recent years on the subject of the internal secretions leads one to hope that scientists will soon discover the decisive influence that such secretions exercise on the morphology of the organism as well as on the psychical characteristics, and, therefore, it is not being rash to think that endocrinology will furnish the key to decipher the mystery and the clue to explain the correlations of the organic world with the spiritual.[79]

Writing in the "Revue Tomiste," five years later, he bears witness to at least the partial fulfilment of this prophecy even at that early date (1931).

> It is clearly demonstrated that a large part of the individual differences, both morphological and psychical, observed in the human species, depend on the functioning of the endocrine glands; and since these glands pour their secretions into the blood and the lymph, we may conclude that the composition of organic humors exercises a definite influence on the determination of individuating notes whether psychical or physiological. Thus it is that the condition of one's humors is an indication of the individual human personality, both in its exterior aspect and from the psychical point of view, particularly in the affective sector. . . .
>
> As to the action of the glands of internal secretion on the physical processes, it may be given as verified, that if not all, at least the thyroid, the pituitary and the adrenals are, without any doubt, stimulants of the superior functions, mainly of those pertaining to the affective zone, in such a way that today, with reason, a great

[79] P. M. Barbado, O.P., "Correlaciones Del Entendimiento con el Organismo," *La Ciencia Tomista*, XXXIII (1926). 180 ff.

importance is given to the character variables as a diagnostic of the humoral temperament. The influence of the thyroid upon the cognitive processes is decisively demonstrated.[80]

For our present purposes, the main things to be noted about the theory are these: that physiological and psychical individuality is determined, on the material side, by secretions manufactured in certain glands, from the digested food, and poured immediately into the blood stream or lymph, by which they are distributed to all the parts of the body and from which each organ withdraws what is necessary for its nutrition and functional efficiency; that a balance is thus maintained in the structure and functional dispositions of each organ and of the body organism as a whole, an equilibrium which has its counterpart in the psychical characteristics, and that predominance of one or more of these secretions in the blood stream determines an individual's physiological and psychical type and is thus responsible for his individual characteristics. These are fundamental postulates of the theory.

2. *The Teaching of the Ancients and Medievalists.*

We have seen, in a summary way, how, according to the ancient and medieval theory, the humors determined the structure and functional dispositions of organs and tissues characteristic of an individual and how through the medium of this physiological individuality they exerted a determining influence upon the individual psychical characteristics. Here we will glance at some of the details involved in this process, with a view to showing the striking similarity they bear, at least in fundamental points, to the *modus operandi* attributed by the endocrinologists to the endocrine secretions in the determination of this twofold correlated physiological and psychical individuality. A treatment of this kind must not in any way be interpreted as an attempt to defend, at least in their details, the scientific doctrines of the ancients and medievalists. That would be absurd. Theirs was definitely a pre-scientific age, in

[80] Barbado, O.P., "La Physionomie," *Revue Thomiste*, XXXVI (1931), p. 335.

the sense in which " science " is taken today, and subsequent discovery has proved the falseness of many of their more specific doctrines as to the causes of physiological structure. They had practically no knowledge of chemistry as we know it today and only a very crude notion of biology. Nevertheless from observation of the effects of what we know today to be chemical composition and activity in the human body, they arrived, with remarkable insight, at some fundamental notions of physiological functions which modern science, with all its paraphenalia, has been able to do little more than build upon, amplify, correct as to detail and place on a more solid scientific footing. If some of these older scholars had had at their disposal the accumulated knowledge of centuries and the means of precise analysis that the moderns have fallen heir to, we venture to say that they would have solved many of the problems over which modern scientists are still splitting their heads. With regard to the matters that we are presently discussing, the particular ancients and medievalists from whom we will quote in the following pages—for the most part, Aristotle, St. Albert the Great and St. Thomas—were not, we must emphasize again, *ex professo* doctors of medicine, but depended for much of their knowledge of biology, anatomy, etc., upon the theories offered to them by medical experts of their era, theories which the medical profession itself considered sufficiently verified to serve as a basis for medical therapy. But meagre and inaccurate in details as was this proferred knowledge, it was yet sufficiently sound in general principles to enable men like Aristotle, St. Albert, and St. Thomas to build upon it a sound psychological doctrine as to the body-soul relationship.

The ultimate purpose, then, in pointing out the following similarities between the humors and the hormones as causes of physiological and psychical individuality is, as we have stated, to stress the fact that men like Aristotle, St. Albert, and St. Thomas had a sufficient knowledge of physiological principles upon which to construct a solid and impregnable psychology, the full significance of which the moderns have been unable even to grasp much less improve upon and which they would

yet disdain on the grounds that it was not built upon a knowledge of reality.

To begin, therefore, with the hormones and humors themselves, the hormones are chemical compounds " of various types and of varying degrees of complexity. Some are simple organic compounds and can be manufactured synthetically, others are quite complex protein-like bodies." [81] As to their exact chemical composition, not too much is known. Only a comparatively few of the hormones have yet been sufficiently isolated to make chemical analysis possible. Of these only a few have been reduced to more or less accurate chemical formulae. The exact composition of even those hormones whose chemistry is sufficiently known to permit synthetic manufacture, is still open to question, as the endocrinologists admit, since the effects of these synthetic products have not always been found to be exactly parallel to those of the natural secretion. Thyroxin, the thyroid hormone, is one of those whose composition is best known, but the formula of even this hormone is given by Dr. Loewenberg as only approximately $C_{11}H_{10}0_4NI_4$.[82]

These chemically composed hormones act on the various organs and tissues with which they come in contact, to set up chemical reactions and effect chemical changes. One of the most easily observable effects of their chemical activity is the production of such sensible qualities as heat, or a lack of it, in the affected organs. With regard to the thyroid and adrenals, for instance, Berman says:

> If one wished to synthesize the two sets of observations, one would say that the thyroid augmented the acid and heat in the cells, the adrenal cortex diminished them and differences between individuals in these respects, with far-reaching consequences for all their well-being, would be the outcome of the thyroid-adrenal cortex ratio in them.[83]

The ancients and medievalists, observing such effects of their " humors " as increased or decreased heat production in the

[81] Matthew Steel, *Biological and Clinical Chemistry* (Philadelphia, 1937), pp. 13-14.

[82] Loewenberg, *op. cit.*, p. 239. [83] Berman, *op. cit.*, p. 76.

organs, and not being able to submit humors to chemical analysis, naturally concluded that they must be mixed bodies, composed, like other mixed bodies, of those things which were known to produce primarily heat and coolness, *viz.*, fire and earth, and that the different degrees of temperature observed in the various organs and tissues were due to particular combinations in them of their component humors, the combinations differing in different organs of the same body and in the organs of different individual bodies. The same conclusions were drawn from the degree of dryness and wetness observed in various organs, namely, that these qualities were caused by the proportional mixture of their component humors, with their characteristic proportional content of the chief dryness or wetness producing elements, air and water. They had no way of knowing that the various proportions of heat, cold, dryness, and moisture observed in the body were due, not to various combinations of fire, earth, air and water, but to various combinations of some of the very same chemicals that are known today to enter into the composition of fire, earth, air, and water, and to be responsible for their characteristic heat, coolness, dryness, and moistness, *viz.*, hydrogen, oxygen, carbon, nitrogen, etc. Had they been able to carry their observations one step further back by means of chemical analysis of the blood, they would have discovered this fact. The hormones, therefore, are composed bodies whose qualities result from various combinations of chemical elements; the humors were also composed bodies whose qualities resulted from various combinations of what were then thought to be elements, but which are known today to be not chemical elements, but various combinations of chemical elements. Modern chemists can hardly afford to scoff at this ignorance of the older scholars, when they themselves are now beginning to suspect that what they have long considered as chemical elements are in reality only combinations of simpler substances.

The hormones are produced from the digested food, in the endocrine glands, whose distinctive and characteristic feature is that they distribute their products throughout the body by

emptying them directly into the blood stream instead of dispatching them through particular ducts. As mentioned before, Hippocrates, the Greek physician of the fourth and third centuries, B. C., considered the blood as being produced in the heart, the phlegma in the head, the atra-bile in the spleen and the bile in the liver. Galen, the Graeco-Roman physician of the first and second centuries, A. D., taught that all four humors were produced in the liver, and his doctrine became the standard one throughout the early and middle centuries of the Christian Era, in fact until comparatively recent times. St. Albert the Great (1193-1280) thus describes the manner in which the four humors were thought to be produced and distributed throughout the body, according to the Galenic theory:

The digestion of food takes place in the stomach after the liquids we drink have mixed with the foodstuff. This mixture is necessary so that from the whole mass a juice might be formed which will slide and flow through the veins of the liver. After digestion the stomach absorbs some of the juice, and some it dispatches through the veins to the liver, and the rest it sends through the portal vein to the intestines from which the liver draws the juice through the mesenteric veins. The vesenteric veins are narrow strong veins running throughout the intestines: and through these veins the juice passes smoothly until it disperses into the capillary veins which are in every part of the liver: nor would it ever be able to pass through such small vessels, unless it were made fluent by the liquids we drink. But the capillary veins which are interspersed through the whole body of the liver, join in the thick part of the liver, and there they form a large vein and in this a boiling down process (of the juice) takes place, and that happens which happens when any mixed juice is greatly heated. Some of it rises to the top as a foam, and this is the material of the natural cholera; and some of it sinks to the bottom as heavy earth-like substance, and this is the material of the melancholia; and some of it becomes thin and pure, and this is the matter of the blood and some of it remains as a semi-watery liquid, and this is the matter of the phlegma. All these humors then are produced in the bulky portion of the liver under the influence of the heat coming from the heart . . . and then the large vein which connects the heart with the thick section of the liver, divides in this section into two main branches, one of which extends to the upper parts of the body and the other downward and through these veins the blood (carrying the other three

humors with it) is carried to the members, oozing out at all the vein terminals: and when it thus oozes out it is absorbed by the members and nourishes them. It is evident then that a humor is a humid fluent body prepared by a boiling down process for the nourishment of the members. For a humor supplies the nutriment to the bloody or phlegmatic or choleric or melancholic contents of the members, i. e., since the members themselves are composed of humors, their humoral components receive their nourishment from corresponding humors.[84]

The thing which strikes one most in this passage is the fact that the liver in which the humors were produced was thought of as a gland of internal secretion, an endocrine gland in every sense of the word, since it manufactured its secretions from the digested food and dispatched them directly via the blood stream to all the organs, which needed them for their maintenance and operation. The liver, then, bore a close resemblance in its characteristic functions to what are now called the endocrine glands, and its products, the humors, were closely allied in their general activity and purpose to what we now call hormones. Certainly, as we know today, no one gland produces all the hormones, nor are there only four kinds of hormones, nor is the activity of the hormones as simple as that ascribed to the humors; nevertheless the basic features, the general principles are there, and the humoral system can be rightly considered as a sort of simplified prototype of the endocrine system.

Curiously enough, the whole modern notion of glands of internal secretions as distinct from those of external secretion, had its origin in observations of the activity of the liver. In 1855, a French physician, Claude Bernard, after much observation and experimentation, concluded that the liver added sugar to the blood on its way to the heart. " Extraction of the liver then revealed the presence in it of a form of starch, an animal starch, which Bernard called glycogen, the sugar maker. The origin of the sugar added to the blood on its way from the liver to the heart was thus settled. Bernard went on to hail glycogen and the sugar derivable as the internal secretions of

[84] Albert the Great, *De Animalibus*, XII, t. 1, cap. 6.

the liver, and to erect, and then drive home, a theory of internal secretions and their importance in the body economy." [85] It has since developed, however, that the liberation of sugar from the glycogen in the liver is not a function of the liver itself but is due to the action of adrenalin, a hormone of the adrenal glands situated above the kidneys. However, the fact remains that as late as 1855 scientists were still making mistakes as to the precise activity of the liver, though they were partially correct in their observations. Bernard was right at least as to the place where the blood sugar is elaborated and as to the substance from which it is elaborated if not as to the manner of its elaboration, and it was this observation that opened up a whole new line of thought in modern medicine. This is a significant thought when one is inclined to ridicule the value of the empirical observations of the older scientists. Even more significant is the fact that endocrinologists are returning today to the idea of the liver as having important endocrine activity along with its other activities. In fact Berman claims that " it has been demonstrated " to produce at least two hormones, to which, however, no names have yet been given.

It is a curious fact that the liver, which inspired Claude Bernard to invent the words, " internal secretion," for a long time failed to be even listed as one of the major endocrine glands. Certain discoveries of the last few years have, however, restored it to its pristine position, and it has been demonstrated to be the source of at least two hormones which are of the greatest importance in maintaining the normal equilibrium of the body. It may contain many others.[86]

We have noted that the general function of the hormones is primarily to regulate the functioning of all the cells, tissues, and organs of the body by stimulating or retarding their activity as necessity demands and thus to maintain a proper balance and coordination among the functions of all the various parts of the organism. One of the most important phases of their function and one through which they exert perhaps their

[85] Berman, *op. cit.*, p. 116. [86] *Ibid.*

greatest influence in the determination of physiological individuality is their regulation of metabolism by determining the speed and efficiency with which the various cells, tissues, and organs assimilate the nourishment delivered to them in the blood stream for their sustenance and functional efficiency. In the embryo, before the individual's own endocrines are completely formed, this is accomplished in regard to the cell growth, multiplication, and differentiation, largely by the hormones received from the parent body, and in the fetal stages by the functioning of some of the individual's own endocrine glands. From the fetal stage on, development depends to a great extent upon the type of blood, as to hormonal content, with which the various cells, tissues, and organs come in contact.

The humors were considered to produce practically the same effects on organ formation and metabolism, though in a simpler and more direct way by entering directly into the composition of the tissues and organs and later by supplying them directly with their nutriment. In the prenatal period, organ formation and differentiation was accomplished by three successive stages of composition, that namely, of the humors, the " similar members " and the organs. The " similar members " were for the older scientists the various kinds of tissue, nerve, bone, etc., from the combinations of which the different " official members " or organs were formed, though they sometimes used the general term " members " to designate both similar and official members. This process of composition is summarized by Albert the Great in the following quotation. The things here said of animal bodies in general, he considers as applying to the human body also " inasmuch as man is the most dignified of animals and has more perfect members as to number and figure, than any of the others." [87]

First therefore, we may say, that in animal bodies there are three compositions. And the first of these is called " commixture " which results from the mutual alteration of the four elements and their qualities by their reduction to a mixture by means of their

[87] Albert the Great, *op. cit.*, I, t. 1, cap. 1.

primary active and passive qualities, their forms having disappeared in the process; which mixture has differences and grades according to the difference of the animal bodies. But this mixture of elements continues to undergo alteration until the four humors are formed from it, which are the blood, the phlegma, and both biles, the red (cholera) and the black (melancholia).

The second composition pertains to temperament and is accomplished by the transmutation of the humors, producing from this humoral transmutation the similar members: and therefore this operation terminates with the formation of the similar members.

The third composition is the formation of the official member (organ) from the similar members, and the constitution of the whole body from the similar and official members: which compositions, although they appear to be two compositions are really only one: since the similar members are not altered as to their forms in the composition of the official member: and the official members have the same mode of composition in the constitution of the whole body.

The first of these compositions are prior in time and generation, the second is next and the third is the last.[88]

Before the formation and functioning of the liver, the humors entering into the composition of the similar members were, presumably, those derived from the parent body, as in the case of the hormones.

In the third stage of composition, that is the composition of the organs from the similar members, some of the similar members determined the structure of the organs, others were concerned with its operation:

. . . some of the members are as the material of the organic member: since each organic member is sustained by and composed of them, namely from bones, flesh and nerves and the like; in such a way that certain of the similar members are adapted to the substance of the organs, and others to its operation.[89]

Hence the structure and functional dispositions of the organs, i. e. their temperament, would depend upon the temperament of the similar members. But the temperament of all the members, both similar and official, depended upon the type of nutriment they received, whether *in utero* or postnatally, " for

[88] *Ibid.*, XII, t. 1, cap. 4.

[89] *Ibid.*, cap. 2.

in general every member is assimilated in its natural temperament to its nutriment." [90] All nutriment was furnished by the blood, hence the type of nutriment received would depend upon the type of blood with which the members came in contact, which would in turn depend not only upon the blood itself but to a great extent upon the quantity and quality of the other humors contained in and carried by the blood stream. Any excess of one or more humors in the blood would affect all the members by disturbing their metabolic processes, which would affect, for better or for worse, their structural and functional dispositions or temperament. " The most potent factor in determining the good disposition of the members is the blood." [91]

> And if it (the blood) should incline toward the phlegma (i. e. by reason of an excessive phlegma content) it becomes watery: but if to the red bile (cholera), it becomes somewhat turbid: and if to the black bile (melancholia) it becomes fetid and it undergoes many other variations (of these states) from the admixture of these humors.[92]
>
> . . . humors are the nutriment for the similar members which compose the organs: for all the members receive their increase from humors. . . . But these humors have some superfluities which conduce to an improvement or deterioration of the temperament, as in the blood there are various differences when one blood is compared to another; since some blood is thinner, and some thicker and some purer, some more turbid and some warmer (depending upon the proportional mixture of other humors in it).[93]

The hormones, as we have noted, set up and maintain a balance in the functioning of the whole organism. They accomplish this, proximately, by regulating the functional speed and determining the functional efficiency of each organ in relation to the functioning of the whole body and, remotely, by their influence on the structure of the organs both in their formative stage and later as to their development and maintenance. Any excess or defect will upset the general organic balance. The resulting numerous variations in the grades of " normal " departure from perfect balance are the bases of

[90] *Ibid.*, cap. 4.
[91] *Ibid.*, cap. 2.
[92] *Ibid.*, III, t. 2.
[93] *Ibid.*, XII, t. 1, cap. 2.

physiological individuality, and the general over-all predominance of one or more kinds of hormones in the entire system determines the various " types " of individuality.

The humors also regulated the functional balance necessary for the efficient operation of the organism as a whole. Balance in the whole organism depended upon the efficiency with which each organ performed its function. This efficiency depended upon the good structure and functional dispositions of the organs. Good disposition of the organs was a question of proper balance in each of the humoral qualities, heat, cold, moistness and dryness, which depended in turn upon the proper balance of humors in the organs themselves and in the blood stream from which they were fed. Proper balance in each organ was not a question of absolute equilibrium between all the four qualities, but of a proportional balance of qualities that was fitting for the individual organ according to the part it had to play in the functioning of the whole organism. A predominance of heat was required in some of the organs, of coolness in others, of dryness in others, etc. If the proper relative predominance of a quality was maintained in each organ, the organs would function properly and a more or less perfect equilibrium would result in the structure and functioning of the organism as a whole. Any upset in the proportional balance proper to an organ resulted in an upset of the equilibrium of the whole organism. We will give a few of the many passages from St. Albert dealing with these matters:

. . . a man is not well balanced unless each member which is in him has that disposition which it ought to have according to the demands of his equilibrium, though considered in itself, it (the organ) may not be evenly balanced: for such inequality reduces the whole to equality. For the heart is very warm: but this is required for the reduction of the other (organs) to equality.[94]

The seventh mode (of equilibrium) is in the members according to which mode each member according to its species has its own proper quality, whence we say that the bone should be drier than the other members, and the brain should be more humid, and likewise with the others.[95]

[94] *Ibid.* [95] *Ibid.*

. . . it (this equilibrium) has a latitude and a mean, when, namely, the member is in the best disposition in which it is able to be.[96]

The proportional balance proper to each organ according to its function in the organism as a whole depended upon the humors. This proportional balance in each organ was not, as we have said, an even balance, but a balance characteristic of the organ itself, which in most organs was actually an imbalance, i. e. in relation to an absolute equilibrium. In the realm of heat and cold, this imbalance was called " intemperance."

And intemperance in general comes about in two ways, without matter, i. e. through the quality alone, or with matter, which is some humor. Without matter, as when something is greatly altered by something hot or cold, in such a way that only the quality is augmented in it, as things become warm near a fire, or cold near ice. But with matter, of a humor, something is called intemperate in two ways: for either that matter which causes the intemperance (i. e. the humor) penetrates into the member or it is contained in the veins and nerves. Among the intemperate organs the hottest in the body is the heart.[97]

If the equality of the general temperament proper to each individual was upset within a certain range, the result would be a better or worse, although still " normal," general condition. If the upset was too great, the individual's general condition and his " life " would be abnormal or pathological.

But beside the aforesaid modes there is an equality of temperament which is proper to the individual according to which he is able to live and if this equality is upset the temperament becomes unbalanced: and this also has a certain latitude and two terms: and the mean is the equality according to which the life proper to himself is best: and if the equality departs a little from this, his life is good, not best: and it can depart so much that it will be unbalanced and bad.[98]

The variations of temperament within the range of " good " would determine normal types of physiological individuality. The " perfect man " would be one whose general temperament was in perfect equilibrium. But such equilibrium rarely, if

[96] *Ibid.*, cap. 4. [97] *Ibid.* [98] *Ibid.*, cap. 4.

ever, existed. According to the degree in which an individual approached or departed from this perfect norm, he would have a better or worse temperament.

But the first mode of equality, which is according to the nature of the species in comparison with other species, has a latitude, insofar as all individuals of one species have the same (specific) equality. But there is a state which some individual might attain most absolutely and in the highest degree and other states consist in degrees of approach to that state. Therefore the most absolute mode of equality and the mode of this latitude pertains to the second mode of equality, as if we would say that some man possessed the greatest equality and the most absolute which is possible to the species and nature of man. This man says Aristotle in " First Philosophy " would be the norm of measuring all other men in that he would exhaust the possibilities of the human species, and others would participate in these possibilities according to their approach to him. Rarely, however, is perfect equilibrium of this kind found because such a man would have to have in all his members the most perfect disposition and balance of which his nature is capable.[99]

The predominance of one humor in the whole system was the basis of various types of individual temperament:

. . . temperament is the quality resulting in animal bodies from the quality of contrary activities according to which the qualities themselves are altered by each other.[100]

However it must be known that every man has his own individual temperament.[101]

There is a diversity among men due to the fact that the (individual) nature of some follows the cholera more, and that of others, the other humors.[102]

These, then, are a few of the points of similarity observable between the humors and the hormones as to their nature, production, function, and effects upon the human organism as well as to their influence in the determination of physiological individuality. They have, besides, many other points of similarity too numerous to discuss here. Now such similarities are

[99] *Ibid.*

[100] Albert the Great, *op. cit.*, XII, t. 1, cap. 4.

[101] *Ibid.*, cap. 2.

[102] *Ibid.*, II, t. 2, cap. 3.

too close and too numerous to be merely accidental; they must arise from the fact that the chemical substances now known as " hormones " were known, at least as to their effects, to the ancients and medievalists and were given by them the general designation of " humors," a name, by the way, which is still applied to the endocrine secretions by some of the moderns. The fact that the older scientists arrived at their deductions as to the nature and functions of the " humors " by concluding from the effects observed that the causes must be something like this, in no way invalidates their conclusions, at least as to the general nature of those causes. Their limited knowledge of biology, anatomy, and chemistry made it impossible for them to conduct a more accurate and scientific investigation of the physiological entities whose effects they observed, nevertheless they were able to arrive at certain basic notions about them which are quite in line with what modern science now claims to have established. As a matter of fact, much of the data about the hormones presented by the endocrinologists today and purported to have been culled from " scientific " observations, represent mere conclusions drawn from the observation of various disease symptoms, etc. The comparatively few hormones that have been isolated and chemically analyzed are by no means sufficient to explain the elaborate mechanism of function and effect attributed by the endocrinologists to the endocrine system " in toto," nor do their experiments with hormone injections, partial removal of glands, etc., by any means always prove what they are supposed to. The fact that the ancients and medievalists were never able to analyze chemically nor produce synthetically what they called " humors " does not prove that their deductions were something dreamed up out of the blue with no empirical facts as their basis. Their conclusions *were* based on empirical observation, albeit of a less specialized kind than is possible today.

As to psychical characteristics, the ancients and medievalists arrived at the same general conclusion as have the endocrinologists, namely, that psychical individuality was based upon physiological individuality. Here they had not much less to

go on than have the endocrinologists, for the data of psychical phenomena is more easily observable by common observation, experience, and introspection than are those of the intricate body chemistry. The principle thing that modern psychometrics has proved is the fact that they prove very little more than common observation can prove and, frequently, considerably less. The endocrinologists base most of their conclusions as to the relation of hormones to psychical characteristics upon the observance of changes in psychical qualities accompanying various sensible changes in organic dispositions known or thought to be caused by under- or oversecretion of the endocrine glands. This type of observation was open to and was in fact widely used by the ancients and medievalists. Like the endocrinologists, they too attributed these psychical changes ultimately to that which they considered as causing the said bodily changes and diseases, namely the humors. The fact that this ultimate basis has since been proved to be hormones instead of humors is of little importance in the field of psychology. The significant thing is that the older scholars recognize the fact that psychical qualities are determined to a large extent by organic dispositions. And, more important still, is the fact that they, unlike the endocrinologists, realized that the explanation of this fact does not lie wholly in the organs themselves, as we shall see later.

We have noted how the endocrinologists consider the nervous system as one of the most important organic media through which the hormones affect psychical qualities. The ancients and medievalists had the same idea, at least with regard to the sensitive psychical qualities, even though their knowledge of the nervous system was very rudimentary.

> We say, therefore, that a nerve is a viscous substance, directed from the brain through the body, that through it sensation and motion might be given to the body. For the principle utility of the nerve, which is substantial to it is that through it as an organic medium, the whole body should receive the power of sensing and moving.[103]

[103] *Ibid.*, I, t. 2, cap. 18.

Since the nerves were one of the " similar members " entering into the composition of organs, their structure and functional dispositions were, like those of all tissues and organs, largely dependent upon the humors. The nerves in the skin, for instance, were maintained in a temperate disposition by reason of the blood with which they came in contact: " . . . the cause of the temperance of the skin is that the nerve tissue which is interwoven in the skin, is tempered by the blood. . . ." [104]

But a more proximate and important medium through which the humors influenced the psychical characteristics were those unique inventions of the ancients and medievalists, the " vital or animal spirits," which were sort of rarified forms of the humors and acted as carriers for the distribution of the various powers of the soul to the appropriate organs of the body; " very thin vapors," says St. Thomas, " through which the powers of the soul are dispersed throughout the parts of the body." [105] The " spirits " were generated at high temperature from the blood in the heart, whence they passed through the veins to the ventricles of the brain which served as a kind of store house where the spirits underwent a " cooling " process due to the coolness and humidity of the brain tissues, and whence they were dispatched throughout the body as bearers of the soul's powers. They accompanied the blood to all the parts of the body, and being products of the blood humors, their qualities varied according to the humoral content of an individual's blood. Slow-moving blood, heavy with the melancholia, produced slow-moving, cloudy spirits; clear, fast-moving blood, rich in cholera, produced speedy and clear spirits, all of which qualities were reflected in the individual's psychical characteristics due to the various effects of different kinds of spirits upon the organs through which the soul's powers were exercised. Just how the spirits functioned in some of the phychical activities we will see shortly. While the nerves were important as an organic medium of sensation, it was the spirits that acted as " go-betweens " between the brain and the nerve tissues in various parts of the body. Fantastic as all this sounds to modern ears, it is

[104] *Ibid.*, XII, t. 1, cap. 4.

[105] *I Sent.*, d. x, q. I, a. 4.

not at all unlikely that the postulation of " spirits " by the older scientists resulted from their observation of phenomena which are attributed today to that mysterious telegraph system whereby messages are relayed along the nerve tracts by means of a succession of nerve impulses.

As we did with regard to the endocrinologists, we will give here a few quotations from the older writers expressive of their notions as to the effect of humors, through the medium of spirits and organs, upon the psychical characteristics in general. It must be remembered that the quality of the blood resulted from its characteristic humoral content as did also the qualities of the spirits generated from and accompanying the blood. " Fibers " or " fibrin " (fibrae) was a form of the earthy humor in the blood, i. e. the melancholia. The " watery " element was due to the phlegma. To begin with Aristotle:

> Some animals . . . have a keener mind than others, not because of the coldness of their blood but rather because of its thinness and purity, neither of which elements are found in earthy blood: for those whose humors are lighter and purer have a more mobile sensibility . . . those animals are more timid whose blood is very watery . . . and so those whose heart is of this temperament are more prone to fear. Those whose blood is rich in thick fibrin, have a more earthy temperament, and habitually become angry, and are prone to rage. The nature of the blood is the cause of many modifications that are found in the characteristics and sensibility of animals.[106]

Concerning Galen's notions, Roback says:

> In this way Galen was able to assign a definite cause for each of the four outstanding types of individuals in the preponderance of the so-called bodily humors. The sanguine person, always full of enthusiasm, was said to owe his temperament to the strength of his blood, the melancholic's sadness was supposed to be due to the over-functioning of the black bile, the choleric's irritability was attributed to the predominance of the yellow bile in the body, while the phlegmatic person's apparent slowness and apathy were traced to the influence of the phlegm.[107]

Says Moses Maimonides (1135-1202 A. D.):

[106] *De Partibus Animalium,* II, cap. 4 (ed: Didot, pp. 235-36).
[107] Roback, *op. cit.*, p. 11.

For instance, a man whose natural constitution inclines towards dryness, whose brain matter is clear and not overloaded with fluids, finds it much easier to learn, remember, and understand things than the phlegmatic man whose brain is encumbered with a great deal of humidity.[108]

And St. Albert the Great:

Since the structure and disposition of the members are generated and nurtured by the blood, it follows that inclinations to the passions may be known to some degree from the disposition of the organs.[109]

Loxus was not so wrong when he said that the blood was the seat of the soul, if it is understood that the soul is there not in respect of its essence, but in respect to the inclinations of its affections; for the spirits, which are the vehicles of its powers, are generated from the humor of the blood; and it cannot happen that something that is carried does not follow in many respects the movements of the carrier. For we say that the melancholics are sad and grave, that they suffer from terroristic images and that they are held in this condition by the gravity, frigidity, and horror of the melancholic blood; for images received in a horrid mind become terroristic.

We see that those having a sanguine temperament, because of the subtility, clarity and temperate condition of the blood, have precisely opposite affections. The cholerics are prone to anger and fervor, and in this condition apprehend fiery representations due to their light and fervid blood. And that is why we define passions in connection with the blood and say that anger is the affluence of blood against the heart.[110]

Moreover intellect in man and the estimative power in other animals are more refined and better, and less refined and worse according to the dispositions of the blood and of the humor which takes the place of blood (i. e. in bloodless animals), not indeed because of coolness of the blood, but because of its greater or less thinness and clarity. Earth lacks subtility and clarity, wherefore those having an earthy blood (melancholics) are duller and slower in concepts and operations of the soul. For an animal having a more refined and purer natural humor, has a better sensibility.[111]

And St. Thomas:

[108] Moses Maimonides, *Eight Chapters of Ethics* (quoted by Roback, *op. cit.*, p. 43).

[109] Albert the Great, *op. cit.*, I, t. 2, cap. 1.

[110] *Ibid.*

[111] *Ibid.*, XII, t. 2, cap. 1.

But the subject of delectation and of all the passions of the soul is the animal spirit which is the proximate instrument of the soul in the operations which are exercised through the body. But for the spirit to be apt for delectation, two things are required, namely due quantity, and due quality. Due quantity refers to an abundance of spirits, for two reasons. First because a spirit abundant in quantity, abounds also in power. Secondly, because since for the passion of delectation there is required a dilation of the heart and the spirits, dilation cannot take place when the spirits are few, because nature constricts them and confines them to their source. But when the spirits are many, nature is able to retain some in their source and still pour them out in abundance for dilation. Due quality depends upon three things. First, that (the spirit) be of a moderate temperature. Second, that the spirit be clear and not cloudy; and therefore melancholics, in whom the spirits are earthy and obscure, are prone to sadness. Third, that its substance be midway between thickness and thinness. For if it is excessively thick or excessive thin, it is not adapted to delectation, because it is not easily dilatable. The greater therefore is the disposition to joy or sadness on the part of the material cause, the less is required on the part of the formal cause, and vice versa: and therefore some individuals become joyful or sad on slight provocation, but others only on great provocation.[112]

This last quotation from St. Thomas gives us some idea of the notions of the older scholars as to how the humors and spirits functioned in relation to joy and sadness and how proneness to these passions depended upon the humoral disposition of the blood. We will now glance at their theories as to humoral function in fear and anger, as compared to the endocrinologists' ideas of hormonal function in these same passions. We have noted how, according to the endocrinal theory, fear causes a release of adrenalin by the medulla section of the adrenal glands, which results in an increased blood pressure, heart beat, nerve excitation, etc. The perception by the associative memory of these various bodily changes constitutes according to Berman, the emotion of fear. It would seem from this that the greater the release of adrenalin, the greater would be the fear. But it seems that the reverse is true, for apparently the

[112] *IV Sent.*, d. xlix, q. 3, a. 2.

sensations in the organs, perceived by the associative memory, are due not simply to stimulation but to the proportion which exists between the amount of stimulation demanded by the organs in a fear-arousing situation and that which is actually supplied. If the heart, nerves, muscles, etc., cannot respond adequately to a situation by reason of an insufficiency of material stimulants, the individual will be incapable of fight or flight and hence his fear will be greater. As Berman says:

> In the facing of crises, the adrenal functions as the gland of combat. And indeed, as I have mentioned, the more combative and pugnacious an animal, the more adrenal it has, while the timid and meek and weak have less. Of the two animals, if in one the heart should begin to beat more strongly, the blood pressure to rise, the blood to flow more rapidly through the attacking instruments. . . . while the other experiences none of these, the former will be the victor in fight or flight.[113]

Moreover, fear produces coolness in some parts of the body because the blood has a tendency to withdraw from the outer parts of the body and concentrate around the muscles and the organs which must be conditioned for fight or flight.

> The blood, that primary medium of life, the precious fluid that is everything, must all or nearly all be sent to the firing line, the battle trenches, the brain and muscles, now or never. So the blood is drafted from the non-essential industries—from the skin where it serves normally to regulate the heat.[114]

This withdrawal cause coldness in the extremities, which becomes even more pronounced in persons whose adrenals are habitually insufficient.

> There results (from exhaustion of the reserve supply of adrenalin) a condition of temporary or chronic adrenal insufficiency, supposedly an insufficient function of the gland as a whole. In persons so afflicted there appears a fatibability, a sensitiveness to cold, cold hands and feet.[115]

The inadequate response of the organs involved in fear would be due to an insufficient supply of adrenalin released into the

[113] Berman, *op. cit.*, p. 79. [114] *Ibid.* [115] *Ibid.*, p. 81.

blood stream. Hence a person whose supply of adrenalin was characteristically inadequate, due principally to innate defective disposition of his adrenal glands, would be more prone to fear; i. e. he would experience fright on slight provocation due to the failure of his adrenals to supply the organs with sufficient hormones to enable them to react adequately to the fear-arousing stimulus. Moreover, in such a case, fear would be more intense and would last longer than in the case of one whose adrenalin release was adequate to meet the situation. Proneness to fear is a common symptom in pathologies resulting from hypofunction of the adrenals.

In the humoral theory, proneness to fear was also attributed to the insufficiency of a humor in the blood, namely, the melancholia, though in a somewhat different manner. A lack of this thick earthy element would result in the blood being too watery and thus easily congealable by the cooling effect of fear. This would result in an insufficient production of spirits in the heart, with a resulting inability of the organs to meet the situation, an inability to attack the evil, an inclination to run away, or, if the fright was sufficient, a paralysis, shaking of the knees, etc., all of which would increase the fear and make it last longer. To quote Aristotle again: " . . . those animals are more timid whose blood is very watery: for water is congealed by cold: and for this reason also animals lacking blood are more timid than animals with blood . . . and when terrified they remain motionless." [116]

St. Albert's teaching on the subject is as follows:

Animals whose natural humor is very watery and capable of being quickly cooled, are of greater temerity, since fear cools the body on account of the transit of the blood and heat and spirit. If then the humor is congealed, the heat to dissolve it does not quickly return; therefore such animals remain frightened and motionless for a long time. Hence the animal whose heart is of such a temperament, that is, could and watery, suffers frequently from any slight cause a paroxysm of fear. For cold water is quickly congealed; wherefore an

[116] *Loc. cit.*

animal without blood has greater fear than one with blood, so that such animals become motionless when frightened.[117]

St. Thomas says on the matter:

As to the appetitive movement of the soul, fear implies a certain contraction, the reason of which is that fear arises from the imagination of some threatening evil which is difficult to repel. But that a thing is difficult to repel is due to lack of power . . . and the weaker the power is, the fewer the things to which it extends. Wherefore from the very imagination that causes fear there ensues a certain contraction in the appetite. It is in resemblance to this contraction, which pertains to the appetite of the soul, that in fear a similar contraction of heat and vital spirits towards the inner parts takes place in regard to the body.[118]

As the Philosopher (Aristotle) says (*De Problem.*, xxvii, 3), although in those who fear, the vital spirits recede from the outer to the inner parts of the body, yet the movement of vital spirits is not the same in those who are angry and those who are afraid. For in those who are angry, by reason of the heat and subtlety of the vital spirits, which result from the craving for vengeance, the inward movement has an upward direction. Wherefore the vital spirits and heat concentrate around the heart, the result being that an angry man is quick and brave in attacking. But in those who are afraid, on account of the condensation caused by the cold, the vital spirits have a downward movement, the said cold being due to the imagined lack of power. Consequently the heat and vital spirits abandon the heart instead of concentrating around it, the result being that a man who is afraid is not quick to attack, but is more inclined to run away.[119]

. . . in fear there takes place a certain contraction from the outward to the inner parts of the body, the result being that the outer parts become cold. For this reason trembling is occasioned in these parts, being caused by the lack of power in controlling the members, which lack of power is due to the want of heat, which is the instrument whereby the soul moves those members.[120]

In fear, heat abandons the heart, with a downward movement: hence in those who are afraid the heart especially trembles, as also those members which are connected with the breast where the heart resides. Hence those who fear tremble especially in their speech, on account of the tracheal artery being near the heart. The lower

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[117] *Op. cit.*, XII, t. 2, cap. 1.
[118] *Summa Theol.*, I-II, q. 44, a. 1.
[119] *Ibid.*, ad 1.
[120] *Ibid.*, a. 3.

lip too, and the lower jaw tremble, through their connection with the heart, which explains the chattering of the teeth. For the same reason the arms and hands tremble, or else because the aforesaid members are more mobile. For which reason the knees tremble in those who are afraid.[121]

On the part of the bodily instruments, fear, considered in itself, is always apt to hinder exterior action, on account of the outward members being deprived, though fear, of their heat.[122]

With regard to anger, we noted that Berman attributes proneness to this passion to the ability of the cortex section of the adrenals to secrete a sufficient amount of its hormone, "cortin," to offset the inadequate supply of adrenalin by the medulla section. If, when an animal is subjected to some fear-arousing stimulus, his adrenal cortex releases an abundance of cortin, his extensor muscles—the muscles of attack—become tense, his blood pressure, heart beat, nerve impulses, etc., are sufficiently accelerated to enable him to repel the threatened evil and instead of protracted fear and an inclination to escape, there is produced anger and an impulse to face and overcome the threatening evil, which would be characteristic, as he mentions, of such animals as bulls, lions, etc. This produces a particular type of anger, a sudden, vehement anger, lasting only long enough to repel the evil. Another type of anger, a slowly mounting, but strong and long enduring one, is attributed, as we shall see later, to other hormones.

In the humoral theory, this quick, vehement anger was attributed to an excess of cholera; more slowly rising, longer lasting anger was due to an excess of the melancholia in the blood as represented by the presence in the blood of small fibrous particles of melancholia which underwent in anger a gradual heating up process and a correspondingly slow cooling off process. When heated, these fibers stimulated the blood and the heart and caused an increased production of warm spirits with a corresponding rise and intensification of anger. As Aristotle says:

[121] *Ibid.*, ad 3. [122] *Ibid.*, a. 4.

Those animals whose blood is rich in fibrin, (melancholia) have a more earthy temperament, and habitually become angry and are prone to fury. Anger produces heat, but solids, once they are heated, give off more heat than do liquids. The fibrin is solid and earthy, and so acts as a sort of foment in the blood, and it causes a heating up of the blood by anger, whence it comes about that bulls and boars are wrathful and are prone to rage.[123]

Albert says on this subject:

Sometimes, moreover, there are in the blood of some animals small hair-like bodies (fibrin) dispersed through the blood and these animals have an earthy blood, which when it is heated, holds the heat for a long time. Therefore these animals are very prone to anger, and retain their anger a long time, for anger moves the heat because of the desire for revenge, in which the heart is enlarged, giving off heat and blood and spirits. Such blood remains hot a long while because earthy material holds heat longer than does the humidity of water. The fibrous earthy bodies which are in the blood of such animals, become in times of anger like coals of fire; this is the reason for the common saying, that the bull and the boar are animals exceedingly prone to anger, and they become confused and wild when angry because they have many such fibrous bodies in their blood.[124]

St. Thomas describes the quick, effervescent type of anger due to the cholera:

Now the impulse to passion may arise either from its quickness, as in choleric persons or from its vehemence, as in the melancholic, who on account of their earthy temperament are most vehemently aroused.[125]

. . . a man is prone to become angry because of his choleric temperament, and the cholera moves more swiftly than any other humor; for it is like fire.[126]

Damascene says (De Fide Orth. ii, 16) that anger is fervour of the blood around the heart, resulting from an exhalation of the cholera. And because the movement of anger is not one of recoil, which corresponds to the action of cold, but one of prosecution

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[123] *Loc. cit.*

[124] *Op. cit.*, XII, t. 2, cap. 1.

[125] *Summa Theol.*, II-II, q. 156, a. 1, ad 2.

[126] *Ibid.*, I-II, q. 46, a. 5.

which corresponds to the action of heat, the result is that the movement of anger produces fervour of the blood and vital spirits around the heart, which is the instrument of the soul's passions. And hence it is that, on account of the heart being disturbed by anger, those chiefly who are angry betray signs thereof in their outer members. For as Gregory says (Moral, v. 30) the heart that is inflamed with the stings of its own anger beats quick, the body trembles, the tongue stammers, the countenance takes fire, the eyes grow fierce, they that are well known are not recognized.[127]

There are, naturally, many differences in detail between the precise manner of functioning ascribed to the hormones in the physiology of the passions and that attributed to humors, but in fundamental notions, the likenesses are substantial and striking: e. g. the nature of the blood as the chief determinant of inclinations to passions, due, in the endocrinal theory, to its hormonal content, in the humoral theory to its humoral content; the physiological functions through the medium of which both hormones and humors are considered to exert their influence on the passions, *viz.*, blood pressure, heart action, muscle tension, nerve excitation, etc.: and in a general way, the manner in which the hormones and humors function in this mediation; the notion of physiological speed and heat and expansion in the " warm " passions such as anger, and lack of heat, contraction, etc., in the " cold " passions like fear.

With regard to the actual manner of functioning of the hormones in intellectual activity, the endocrinologists are, as we have seen, very vague. They know from observation that greater or less mental ability, speed of mental reaction, etc., are in some way dependent upon and correlated with over- or undersecretion of such hormones as thyroxin and adrenalin, but as to just how or why this is so, only a few of them even venture an explanation. Berman, as already noted, would attribute the intensification of mental activity in dangerous situations to an increased electrical conductivity of the brain cells, brought about by an increase in thyroxin and adrenalin secretion, which would result in an increase of speed with which the

[127] *Ibid.*, q. 48, a. 2.

electrons would fly through the cells, from which would result in turn an increased speed in sensation and ideas. As to the functioning of the pituitary secretions in determining such mental qualities as soundness and accuracy of judgment, ability to coordinate knowledge, etc., he is silent. He simply states the fact, presumably arrived at by observation of mental phenomena accompanying hypo- or hyperfunction of the pituitary. Actually, little more is known than the fact that under- or oversecretion of certain hormones creates some sort of disposition in the chemistry of the brain which influences the quality and type of mental reactions. The ancients and medievalists knew this much and some of them, a good deal more besides. For Aristotle and his followers, the data which the mind used in forming its concepts were the sensible images impressed upon the internal sense organs of memory, imagination, etc., from which they were abstracted by the active intellect. Better or worse intellectual ability was dependent, at least externally, upon the quality and quantity of the images presented to it, which were in turn dependent to a great extent upon the better or worse disposition of the internal sense organs themselves. In general, this disposition was reducible to a greater or less sensitivity of the internal sense organs, a sign of which was a greater or less sensitivity of touch. The disposition of sensitivity would be influenced by and be dependent upon everything that entered into the structure and function of the internal sense organs, the humors, the similar members, the nerve construction and function, the blood supply, etc., with the humors as the basic determinants of all. A predominance of one or another of the humors in the organ or in the blood upon which it depended for its maintenance and function, would have its effects upon the image-forming activity of memory, imagination, etc., and consequently upon the quality and quantity of images produced, which would have profound effects upon the quantity and quality of the intellectual concepts, their clarity or obscurity, stability or instability, etc., and upon the speed of mental reaction and mental ability in general. Different types of mentality would depend upon predominance of particular

humors in the blood and in the brain organ itself. To requote St. Albert:

> But intellect in man and the estimative power in other animals are purer and better, and more impure and worse according to the dispositions of the blood, not by reason of the coldness of the blood, but on account of its greater or less thinness and clarity. But earth does not have thinness or clarity, wherefore those having a very earthy blood are duller and slower in their conceptions and operations of the soul. An animal whose natural humor is thinner and purer, has a better sensibility because goodness of sense apprehension . . . is not caused by a hot or cold, but rather by a thin or clear or gross or obscure natural humor.[128]

Nevertheless, a certain kind of melancholia, one not too dry and more easily mobile, due to an admixture of humidity, begot, through the spirits, a deeper, steadier type of mentality:

> But in men also this humor has different degrees: for if it is not very dry . . . it will produce many steady and strong spirits. Wherefore men possessing such spirits have firm concepts and very well ordered ideas, and they are studious and endowed with the highest virtues.[129]

St. Thomas, commenting on Aristotle, also attributed firmness of phantasmal impressions to the melancholia: " and this occurs especially in melancholics, who are greatly moved by their phantasms: because, on account of their earthy nature, the impressions of the phantasms are more firm in them." [130] This would explain why some men, though slower in their mental reaction, nevertheless retain their knowledge longer because of the deep impression eventually made on their memories:

> . . . but as frequently happens, those men remember better, who are slow to understand and learn . . . and the reason is that different dispositions of men towards the operations of the soul come from diverse dispositions of body. But we see that in corporal

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[128] Albert the Great, *op. cit.*, XII, t. 2, cap. 1.
[129] *Ibid.*, II, t. 2, cap. 3.
[130] *De Memoria et Reminiscentia*, lect. VIII (ed: Pirotta, p. 139).

things, those which receive an impression slowly and with difficulty retain it well . . . but those which receive it easily do not retain it well . . . And, since to remember is nothing else but to preserve well that which is once received, hence it is, that those who are slow to receive, retain well what they have received, which is to remember well. But those who receive easily, also frequently lose easily.[131]

All of which indicates that these authors had at least a fundamental notion of the relation between brain chemistry and types of mental reaction, and we might venture to say that their explanations of this interrelation, even from the physiological standpoint, is hardly less satisfactory than is that of the endocrinologists. Over and above the fact of such an interrelation, precisely how and why such and such a chemical disposition in the brain organ should produce such and such a mentality, the moderns have been able to determine little more than did the ancients and medievalists. St. Thomas, for instance, in saying that " to a good disposition of the internal senses, such as imagination and memory, and cogitative power, a good disposition of the brain is necessary," [132] is summing up practically all that modern science has been able to definitely prove about the effect of brain disposition upon the intellect and is, besides, indicating the very point upon which the whole explanation of this correlation must eventually rest—in which he far surpasses the moderns. Commenting on the last quoted passage of St. Thomas, Fr. Barbado says that the term " disposition " is

. . . a word of generic signification which embraces the modern concepts of cortical architecture, neural connections, cell structure and chemical composition, since all these things contribute to the better disposition of the cerebral elements. . . . It has been abundantly demonstrated that, according to the Angelic Doctor, there must of necessity exist a correlation between the weight and quality of the cerebral organs and the perfection of their respective functions of imagination, memory, etc., and this correlation must be positive and as perfect as that which always exists between the

[131] *Ibid.*, lect. I (ed: Pirotta, p. 107). [132] *Q. D. De Anima*, a. 8.

cause and the effect. But not stopping here, the Saint, uniting this law with his doctrine on the genesis of understanding, concludes that there must also exist a correlation between the quality of the intellectual operations and the perfection of the cerebral organs.[133]

To sum up very briefly, then, the points of similarity, considered in this chapter, between the humoral and the endocrinal theories of physiological and psychical individuality, we might say that the humors were as much " endocrine secretions," i. e. products of a gland of internal secretion (the liver), as are the hormones. They, like the hormones, were dominant factors in the determination of the structure and functional dispositions of bodily organs characteristic of an individual, both in the formative stage, *in utero*, and throughout life. Too, through the medium of the blood, nervous system and other organs, they influenced the psychical activities, as do the hormones, in such a way as to be chiefly responsible, at least materially, for all the individual differences in psychical characteristics so obvious among men. The manner in which they exerted this influence was, in a general, basic way, very similar to that in which the hormones are today thought to exercise their influence. We will consider further points of similarity between the two theories, i. e., in regard to the classifications of various temperaments and the assigning of particular psychical characteristic to each " type " of individual. But even thus far in our discussion we have enough evidence to more than justify the following statement of Roback, made as early as 1927, before many of the postulates of the endocrinologists had been verified by adequate experimentation:

From Humors to Hormones! It is one of those curios of cultural destiny that after so many migrations and transformations, the doctrine of humors should, like a colossal ballad or rondo extending over twenty-five centuries, hark back to the beginning when all explanations centered around the fluids of the body. The original theory, now concluding its cycle in the almost universally received opinion of today that the secretions of the endocrine glands,

[133] Barbado, O. P., " Correlaciones Del Entendimiento Con el Organismo," *La Ciencia Tomista*, XXXIII (1926), 191-92.

injecting into the blood hormones of various sorts, are of vital importance in the organization of a given temperament, provides at present much food for thought, even if the thinking, without the indispensable experiments back of it, must necessarily remain of the groping kind.

What if the old terms are no longer used in discussion of the effects of the ductless secretions, the "manes" of Hippocrates and Galen [and, we might add, of Aristotle, St. Albert, and St. Thomas] can still point with triumph to their speculative child and say their "I told you so.[134]

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(*To be concluded.*)

[134] Roback, *op. cit.*, pp. 101, 102.

BOOK REVIEWS

The Idea of Perfection in the Western World. By Martin Foss. Princeton: Princeton University Press, 1946. Pp. 102, with index.

This slender volume deserves greatest consideration. It is destined, the author states in his preface, to " clear the way, by means of criticism, for a more elaborate and constructive approach," to be published under the title *Symbol and Metaphor.* The present book is undoubtedly the work of a scholar who has given much thought, of no small originality, to the problems he discusses, and who also has endeavored to do justice to his predecessors, even though he believes them to have held false opinions. Sometimes, however, it seems that he has failed to grasp the true meaning of the ideas he opposes, as will become evident in the analysis of his theory.

The main thesis of the book is that the notion of perfection, as developed by Greek speculative thought and incorporated into Christian faith and philosophy, is a mistaken one. It consists, the author feels, in relating perfection to end, hence viewing it under a quantitative category, defining it as the progress towards a definite state which then is assumed to be perfect. The starting point of the whole argument is given early: " Perfection is the conformity of a reality to its concept." (p. 8) That is to say, the adequation of a thing to the idea we have of it, is what we call perfection. The statement raises some doubt: adequacy to the " concept "? or, adequacy to the " nature "? When our " idea " proves to be erroneous—as well it may be—then our judgment of perfection, on the prior premise, is false also. If, however, the adequation is between a thing and its nature, whether or not this be known wholly, the situation is different. It seems that the author fails to distinguish between these two fundamental notions, that of the concept as it may exist in this or that mind (or even in all minds within a definite setting) on the one hand, and the nature or essence of a thing on the other. The view taken leads further to the assumption that perfection " will occur most whenever a thing has been constructed after the model of the concept." Here one senses another equivocation. The " concept " in accordance with which we construct a thing is not the same as the concept which stands, as a true universal, for the nature of a being. One might submit also that a thing may be eventually superior to the idea we had of it previously. We may have felt, too, that there could not be beauty greater than that which we knew, and then discovered a degree of the beautiful the like of which we could never have imagined. Our idea of perfect beauty will change, and the adequation does not start

with the idea but with the object experienced. Similar instance may occur with tools; the one we thought perfect may appear as rather imperfect when a new instrument is put at our disposal. Unfortunately, the author does not consider such facts which are, after all, rather obvious.

Mr. Foss stresses the relation of " end " and perfection, identifying end with purpose. Such identification is, of course, in many instances absolutely right; that it is universally justified is questionable. To be sure, we read in Aristotle that the end is the essence of perfection, obviously because no change can exist once the end is attained; and, perfection is as well a process, or progress, and a state to be achieved thereby. In one sense, an end is indeed a purpose, provided this purpose be not envisioned as contained in a " plan "; so, we may speak of man being the " end " of all other beings in the material universe. But this does not mean that man is the perfection of the other beings, although they are " because of him " (*Summa Theologica* I, q. 65, a. 2 c.). To identify simply, without any further qualification, end, purpose, and perfection does not appear justified. Yet, it is this identification which furnishes the basis for the author's argument. Insofar as end and perfection are related, perfection is that which defines end, not *vice versa*.

Since, following the author's view, perfection means the attainment of an end, this notion gave rise to a fatal hypostatization. Our aims are limited, and hence perfection is the more attainable the more limited is the end. Limitation makes possible " completeness and perfection." This notion loses its meaning, we are told, when applied to Being, as in Parmenides, because Being is " a most imperfect and empty concept." We need not defend the Eleatic philosopher. Here too, however, it seems that the concept, as in the mind, is substituted for that it names in reality. If the concept of being is empty of explicit content, it refers implicitly to the greatest wealth of content; again there seems to be a confusion of the concept *in mente* and the universal nature.

The author is, perhaps, most unfortunate in his discussion of Scholastic doctrine. Some of his arguments are patently false. He criticizes Christianity for having made God into " a thing, an object." In quoting St. Anselm's formula he *italizes* the *id* and the *maius*, suggesting thus that St. Anselm conceived of God as a neuter, a mere thing. However, this formula is inevitable within the framework of the Latin language. *Numen* is neuter also, as is *vulgus*, and *plebs* is of the feminine gender; does this suggest that Romans conceived of the *plebs* as a female? and a female who is also neuter when called *vulgus*? It seems, also, that the author does not do justice to the *argumentum ex gradibus*; it does not prove that God is the perfect God because there are degrees of perfection, but that such degrees cannot be conceived as possible if there is not a highest, absolute perfection. Similarly, if the *summum bonum* is " the last content of

purpose," it is so not because it is a " highly desired object "; it is rather the latter because it is the highest perfection. Nor is it true that the desired object is God as one among other things; the Augustinian distinction between things to be used, e. g., possessed, and to be enjoyed (*usus vs. fruitio*) should suffice as a warning for such a misinterpretation. The object of desire is the vision of God; but never can man " possess " God as he may possess a thing. One cannot read Aquinas in the light of Descartes, who indeed did not care to differentiate the meanings of thing (*res*) and gave rise to quite disastrous confusions.

There is misunderstanding also, on the part of the author, of the statement that in God there is no real relation to the world (*Summa Theologica* I, q. 13, 7 c). To understand this message rightly it must be considered that a " real relation " is an accident, and so as such cannot be in God. (In fact, many writers overlook the twofold sense of relation in Scholastic philosophy: that it is logical in one, but ontological in another sense, in which latter it is listed as one of the accidents. Were it not of the real order, it could never have become a topic of metaphysics as it has been since the time of Aristotle; and, not only in strict Aristotelian but in other systems, e. g., Gilbertus Porretanus' *Liber de sex principiis*.) The same passage in St. Thomas becomes the source of another and even more serious misinterpretation. St. Thomas, it may be recalled, there uses the illustration of a column being to the right of an animal as clarifying the notion of a relation that is merely of reason; i. e., to be at the right is not a property of the column, but a relation existing only for the mind viewing the relative positions of column and animal. The author, however, thinks that Aquinas likens God to a " lifeless column." (p. 55) No medieval writer could have thought of so doing; and no one who is acquainted with the spirit of Christian philosophy can possibly imagine that anyone of the Scholastics might have conceived of such an idea.

Aristotle " clarified and systematized into a logical and metaphysical principle " the old desire for a unity of being and thinking by means of the " metaphysical principle of identity " in virtue of which the aim and its object become one in God. In Christian philosophy the " frenzy of identity knows no limits ": " all perfections are one, essence and existence are one (Mr. Foss refers to Aquinas and Descartes; why not to St. Augustine?), the possible and actual (Cusanus), even God and the world." For this latter, rather amazing statement, there is no reference besides the two names of Duns Scotus and Cusanus. There is no need to point out that such an identity was held by neither (for Cusanus, cf. P. Rotta: *Il Cardinale Nicolò Cusano*, Milan, 1928).

The second chapter on Christian philosophy starts with the remark that the expression " a perfect God " is almost unknown in the Old Testament, and that a very erroneous conception has crept into Christian speculation

because of the false rendering of a Hebrew word already present in the Septuagint; where the latter has *doxa*, usually translated as glory or honor, the original has *kabod*, meaning " force, will, heart, or soul." (p. 26) The Greek, says the author, had little understanding of an inner life and of a creative personality, which is certainly true although in Hellenistic times some such understanding developed. Perhaps, however, the author overrates the influence of Greek thought and terminology in Patristic writings. It can hardly be claimed that St. Augustine, for example, had no understanding of creativity or personality. It is to be further noted that the author has nothing to say on the correlate of the notion of God's honor and glory, namely the obligations which flow therefrom and determine much of the speculation concerning human nature and perfection.

From the author's general position there follows necessarily his rejection of any " degrees of perfection ": " this comparative use of the term . . . is by no means justifiable." (p. 39) Response can be made that the notion here criticized is closely related to a metaphysic which, probably, Mr. Foss is also unwilling to accept, namely that of a " hierarchy of being," maintaining that as being so also its perfection is different on each of the existential levels. In the light of such a view it is not correct to say that St. Anselm envisions divine perfection as one " relative to the human mind." It is not sufficiently recognized (and in this the author is not alone) that the argument of St. Anselm rests on the supposition of one and only one all-prevading order, so that the *ordo cogitandi* is actually the same—*qua ordo*—as the *ordo essendi*. Hence, it is not the human mind to which God's perfection is relative but that part of the universal order of which mind, in thinking, becomes not only aware but participant. The utmost perfection is *id quo nihil maius potest cogitari* because the order of thought (not of thinking as a mental performance) reveals, be it howsoever indistinctly, a supreme being and supreme perfection. St. Anselm does not claim that reason can reach an adequate knowledge of God; it is quite characteristic of his way of thought that he uses the expression *cogitare ad Deum*.

Two notions seem to be insufficiently considered or, when considered, incorrectly interpreted. One is that of potency and act; the other is that of analogy. Because of a faulty notion of the latter, the author arrives at the statement that terms like " omniscience " are incompatible with the idea of the Absolute or Unconditioned, since " all " is a limited quantity and it is a " degradation for the Divine to be restricted to power and knowledge of merely all." (p. 34) But, if " all " be taken as an analogical term, this difficulty disappears. Only so long as " all " signifies completeness on the level of contingent being does the statement hold. The author also overlooks the fact that the term " individual " is likewise analogical, and that it connotes different natures when asserted of an atom or of God, of

a stone or of a human person. Nor, as he claims, is individuality in Thomism a " mere quantitative difference "; such quantitative differences can be predicated only of beings of the same existential level, and individuality affirms the more of uniqueness the higher in the scale of being the individual stands. The notion of *haecceitas* was not needed, as the author believes, " to emphasize the uniqueness of the individual." This idea was given as soon as it was realized, in the light of Christian faith, that every human soul, and hence person, owes its existence to an individual creative act of God. With the recognition of creationism and the abandonment of traducianism, the uniqueness of the human individual was definitely assured. This was the more true after St. Thomas had stressed the unity of substantial forms and clarified the theory of the one rational soul as the only substantial form in the human being.

Another concept which seems to require interpretation differing from that of the author is the notion of whole and part. One must understand that a " part " is such only so long as it remains within the context of the whole; this is particularly true of organisms, and there the more so the higher the organization. A part separated from the whole where it " organically " belongs, is no longer a part in the true sense of the term. Mr. Foss might have found in St. Thomas the determination of the individual as the *indivisum in se*, and even the indivisible, since we are told that an organ severed from the body is no longer, in strict parlance, " this organ "; an eye taken out of the head is not an eye in the same sense as it is within the integral whole; it is as little an eye as the corpse is the person who died. The part separated from the whole ought to be called no longer a part, but a " fragment." However, the author takes no account of these notions, whether found expressly in St. Thomas or derived from the principles of his philosophy.

On the other hand, Mr. Foss makes many statements which are quite correct, although he is inclined rather to view them as corrections of Scholastic ideas; in truth, they are contained within Scholastic teaching. Nor is the difference in these fundamentals as great between St. Bonaventure and St. Thomas, or the latter and Scotus, or the philosophers and Master Eckehart, as the author believes.

The author's own notion of the " naught," rather closely related to the formulae in Pseudo-Dionysius, Erigena, Eckhart and others, is based first on the realization that many negations have in truth a very positive sense; as innocence and infinity. One might consider here the principle, of Aristotelian origin, that what is *in se* the first may be, and often is, second *quoad nos*; our experience is of the finite, and hence we cannot but start from there, in spite of our realization that the finite is, if one may say so, only the degeneration of the infinite. So also the simple is, in some manner, the negation of the manifold which makes up the bulk, or perhaps all,

of our experience. " The simple . . . is what we call 'Force.'" (p. 51) Force is not cause, not even first cause. (The author refers here to Phaedrus 245 C, D; but there Plato does not speak of force nor of cause. He speaks of that which moves itself as the " fount and origin "—*arché*—and this has to be ungenerated. But, *arché* is not cause, at least not efficient cause.)

Because to the author the naught appears not as negation, he is able to equate the naught with some sort of being; although this is saying too much, for he rather sides with Dionysius and Eriugena. But he also views the naught as a necessary " counterpart " of a complete world; creation is strictly *ex nihilo*: " it is the naught out of which the all not only bursts, but which also links and ties it together." (p. 54)

In regard to creation, however, the author holds that it were impossible if the possible is excluded from God. The possible and the actual do not stand in a relation of contrast and mutual exclusion; they " are united in potentiality " in force and creation. It is conceivable that the author here falls prey to a confusion which has brought forth many pseudo-problems and errors, that namely of the *possibile logicum* and *potentia*. (Cf. A. Faust: *Der Möglichkeitsgedanke*, Heidelberg, 1931, especially volume II.)

The third chapter develops the author's own conception, first in regard to perfection in art; which notion had been eliminated, so we are told, from aesthetics by Kant, and, indeed, has no place there. Kant's notion of the sublime reveals that " the depth of art is a beyond to the world of ends and perfections." Here the close relation the author establishes between end and perfection becomes especially disturbing. Art has been recognized before as having no immediate relation to ends as goals of striving. If Kant spoke of the *interesselose Wohlegefallen*, complacency without interest, i. e., without personal desire being attached to the beautiful object, his idea had been anticipated when St. Thomas characterized the beautiful as that wherein appetition comes to a rest. But, whether one envisions the beautiful or the sublime, it is evident that both are goods or values. Now values exist in degrees; but their gradation is very different from that of mensurable quantities. They are graded not by the " distance " from a zero point, the goodness of the degree zero (it is enough to mention such a notion to realize its inner falsity), but they are " measured " against an ideal or absolute goodness which, indeed, is never experienced, and nonetheless is somehow back of all our evaluations. This fullness of value is neither a " completeness " nor an " end "; it is, if one is to use the author's expression, a " beyond," separated from all possible experience by an unbridgeable gulf, and nonetheless the pivotal point on which hinges the whole " world of goodness." The author, however, has failed consistently to consider the import of the notion of value on that of perfection.

Mr. Foss' remarks on art are, for the rest, very interesting and often very much to the point. He is right in placing emphasis on the fact of "stylization" and denying the name of art to any accurate copy of the real. He has also stimulating ideas on such a thing as the "frame." (Here he might have consulted with advantage the study on the same topic by Georg Simmel, in his *Philosophie der Kunst,* Potsdam, 1922.) In art there is a "transcendence of the modest object beyond its limits," and this is what is called expression, in which "the manifoldness and perfect independence of things disappear in a simplicity which is simple because it overcomes this manifoldness." (p. 69) Nowadays, the problem of expression is disregarded and replaced by that of symbol: "A limited entity standing for another limited entity." However, this idea of symbol is questionable; at least, medival symbolism has held different views, and has eventually seen in the visible thing and the whole universe, in man and in spirit, a "symbol" of the infinite. (Cf. this reviewer's study on "Microcosm," *Traditio*, 1944, II.) But one may well agree with the author that in contemporary writings there is great confusion and some misunderstanding of the essence of symbol. Mr. Foss' statement that "man is an expression of the infinite" (p. 74), would have been quite acceptable to just those thinkers whom he criticises most, the Schoolmen and medieval symbolists.

We shall also agree with the author's evaluation of Kantian "formalistic" ethics and with his emphasizing an ethics of love, which is "not a fixed duty, not an end which waits for its fulfilment." (p. 86) "Love sees always beyond, is always on the way to more and better." But, is this so novel an idea as the author seems to feel? One might easily refer to passages in many a Scholastic, including St. Thomas, by way of corroboration. Finally, welcome must be accorded the praise of "service," as "surrender . . . for an infinity of life, for a will, a personality." (p. 88)

Summarizing his views, the author states that "wherever the idea of perfection emerges . . . we may be sure that the rational concept of end and purpose is at work." (p. 95 ff.) These notions are placed together with completeness and totality; they "receive their justification in a limited field . . . by that which is beyond them and therefore is apt to draw the limits." We shall readily subscribe to this statement; it is the infinite which "limits" the finite, the eternal which provides, if one may say so, the frame for the temporal. But, it does not become evident, at least not to this reviewer, that the author has proven his point, viz., that the applicability *per analogiam* of perfection to the illimited, infinite, "super-essential" is illegitimate. It is not evident that perfection and purpose are linked so inseparably together as the author claims. Perhaps a more penetrating analysis of the several significations of *Telos* or *finis* could contribute to further clarification.

Even this long discussion does not do justice to Mr. Foss' work. It is

of a highly challenging nature; it arouses reflections on problems one often fails to consider; it is a scholarly achievement of definite eminence. If one cannot agree either with the general thesis or with many of the particular statements, one nevertheless profits by studying the author's ideas, which surely do not lack originality. Mr. Foss teaches philosophy at Haverford College. He is sure to be a stimulating teacher. And, all our objections notwithstanding, we ought to recognize philosophical seriousness and originality wherever we find them.

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Logic for the Millions. By A. E. MANDER. Philosophical Library, New York. 1947. Pp. xi, 206 with index. $3.00.

Basic Logic. By RAYMOND J. MCCALL, PH. D. Barnes and Noble, Inc., New York. 1947. Pp. x, 193.

The appearance of two new books on logic, both of which follow more or less the traditional discipline of Aristotle, is a stimulus for the Thomist to consider the present condition of this basic subject. Challenged by a so-called mathematical logic, the Aristotelian-Thomistic mode faces the choice of oblivion before the modern fad for symbols and semantics, or a resurgence to its former and rightful position of training the minds of scientific, philosophic, and theological thinkers. What is needed is a careful evaluation of the current method of teaching the Stagirite's *Organon.* If these two new books serve this purpose, although neither had such an end even remotely in view, their publication may well mean the return to the true logic of Aristotle and St. Thomas, and not the continued acceptance of some manualist's capsule-size edition of it, with the ingredients, at that, badly mixed.

Logic for the Millions, the first book to be considered, is the latest attempt to put rationality on a mass scale into an irrational age. "Thinking is skilled work," observes the author in the Foreword. A. E. Mander is no man to minimize the fact that ability to reason clearly and logically demands constant practice and unremitting effort. Whether Dr. Mander's popularizing will result in correct thinking is the point first to be noted.

To those who never took a course in logic and must rely on whatever natural skill they have acquired, *Logic for the Millions* will have its worthwhile features. Dr. Mander has pages of excellent practical advice to aid in better and clearer thinking. He devotes a section, for example, to what he accurately calls "coloured terms." These terms "not only embody some meaning about the quality or thing referred to . . . but also

suggest our own personal attitude towards it" (pp. 15, 16.) Since such coloring is characteristic of so many of our modern magazines and newspapers, whose adjectives are as important as their nouns, alertness to this subtle type of writing would be a major benefit for the mass of people. The need for defining one's terms, safeguards against false reasoning and shoddy argumentation, a superior treatment of deductive reasoning these are some of the other useful observations made by the author. Unfortunately, they are too occasional and lose value in the general tenor of the book.

For those who have studied the Aristotelian-Thomistic logic and know the philosophic foundations of this great school of thought, Dr. Mander's book is a combination of logic, psychology, and epistemology, none of which is always treated accurately. The very ease with which this work can be read might deceive one into passing it along as a harmless little volume possessing considerable good material. Closer examination will show that, although it does have some merits, the book has other less noble qualities. To the untrained mind, even for Catholics not imbued with a strong and living faith, *Logic for the Millions* could have the disasterous effect of blasting any belief in God out of the mind of the reader.

Eight times (on pages 23-24, 28, 37, 95, 123, 132, 176) Dr. Mander uses illustrations of faulty reasoning which all conclude to disbelief in the supernatural. The accumulative effect of these examples is to leave the reader with the impression that one would have to be most illogical to accept a supernatural statement. The author's innuendos are neither ingenious nor original, but for a new audience of readers they can be devastating.

First he takes an old theological argument that attempts to prove the existence of God. There is no doubt that the proof is invalid. He pushes this point further in his example under "Arguing in a Circle." It is the familiar objection: "The existence of a personal God is proved by the Bible; and the authority of the Bible must, of course, be accepted because it was inspired by God." In his third illustration Professor Mander presents the case of two children, one a Roman Catholic and the other a Presbyterian. Each is switched from its proper home shortly after birth. The author then argues that the children would grow to manhood with beliefs exactly opposite to those they now hold. The title of the chapter in which this occurs is "Groundless Beliefs." The rest of the illustrations proceed in a similar manner and need not be paraded here.

In general, Dr. Mander's approach and the doctrine that he propounds under the name of logic are the perfect exemplification of the so-called modern "scientific mind." It is the type of intellect that wants all its knowledge measured either directly by sense-perception or at least indirectly by returning to the senses as a check. Yet at the same time, the author subscribes to that false and contradictory maxim that "seeing is believing," instead of realizing that seeing is knowing. Thus Dr. Mander

has great difficulty when he cannot verify first hand some item of knowledge. This causes him in the third section of his book, "What May We Believe?" (p. 49), to set down four rules by which to test one's beliefs. Three of them are merely a question of common sense and are safeguards dictated by prudence. Briefly they maintain that the person whose authority is being accepted must be identified, recognized, and unbiased. The other rule holds that, normally, the authority should be living. The reason for this qualification is traceable to Dr. Mander's constant, and almost exclusive, concern with the contingent. For him it truly follows that all knowledge is progressive and what was true a century ago is probably false today. While this is often correct in questions of the physical sciences, it is amazing that the author should group all philosophical truths in the same shifting sand. He thus ignores the great contributions to thinking made in the past. Only the moderns are to be believed because they have the past plus their own age of enlightenment.

Later in his work, A. E. Mander does speak of universal principles. They are limited to such harmless statements as "All fish are cold-blooded" (p. 158.) Fortunately, one can trace the genesis of his intellectual myopia in the pages of his book. For the first dozen or more pages, with one exception which will be treated later, Dr. Mander proceeds felicitously enough. Then he comes to his treatment of "Abstract Terms" and hits his first snag. It is necessary to quote the author at length: "An abstract term is the name of some QUALITY, STATE, or CONDITION of a thing; or some ACTION or PROCESS; or some RELATION between things. For example "Length," "Poverty," "Courage," "Love," "Beauty," "Life," "Thought," "Pain," "Memory," "Intelligence," "Will," "Consciousness," "Personality," "Health," "Evolution." If the reader will work through the examples given above, he will recognize that not one of them denotes anything that can be said to *exist*—that is, to exist in the sense that it is a quality, state, process, etc., of something" (p. 19.) Dr. Mander has confused an accident with an abstract term. For the Thomist the abstract term indicates the form outside of its matter. "White," a predicable accident, is a concrete term, while "whiteness," on the other hand, is an abstract term. Aristotle has treated this point in the fifth chapter of the Categories (2a 26.) The error of Professor Mander is basic to his understanding of logic, not to mention metaphysics. His failure to make a clear-cut distinction between an abstract and a concrete term leads him less than twenty pages later (pp. 40-1) to reduce all propositions to the whim of time and change. Once again, all the examples given here are of contingent facts, this time taken from scientific knowledge or social convention. Thus his examples are verified, but Dr. Mander has remained on the periphery of truth never ascending to the heights of universal verities. He concludes his illustrations with the remark: "Propositions

which are accepted blindly, without question, on the grounds of mere assumption or dogma, need to be frankly recognized as such. Progress in human thought seems to consist mainly in getting rid of such ideas." As is so often the case with this type of writing, there is enough truth in the statements to make them attractive, but the fundament of error has been laid and upon it built the straw house of a false philosophy.

The author spends considerable time in examining the causes of prejudices. This treatment is frankly psychological. Even when it is accurate, the work is vitiated by such a principle as: "Putting it broadly, we should always suspect any of our opinions when we recognize that our happiness depends, directly or indirectly, upon our continuing to hold them—when we might lose anything, material or otherwise, by changing our opinion" (p. 43.) Hence, he might have added, one should suspect the Faith, and husband and wife ought mutually to be suspicious of one another. By employing such an operating principle of action, the universal doubt of Descartes becomes child's play.

Granting the objectivity of reality, Dr. Mander treats the problem of knowledge in a manner which shows how close he can come to the truth of the facts and yet still manage to miss the point. He wants all knowledge verified by sense perception either directly or indirectly, as was mentioned before. Instead of finally admitting that seeing is knowing, the author shows signs of Kantian idealism when he writes: ". . . I believe that I have now a pen in my hand—a belief which corresponds directly to a perceived fact" (p. 72.) Beliefs of this kind, he continues, require no reasoning. Apparently they are intuitive. Later he corrects this statement (p. 78) when he quotes John Stuart Mill on perception by the senses and the judgment of reason. All of which leaves the reader a trifle confused on just what the author himself does hold.

Touching upon the subject of theories (p. 139), Dr. Mander comes right into the Aristotelian school using almost verbatim the very words of the Stagirite as found in the first book of the *Posterior Analytics,* chapter four (73a 21.) In constructing his own theory of demonstration, Aristotle sets forth the principle of *dici de omni.* Dr. Mender uses it, but here again limits his application to the contingent, the thing Aristotle is trying to avoid since there is no demonstration properly speaking of the contingent. Perhaps further investigation into the Aristotelian-Thomistic school would enable Dr. Mander to make the jump which could turn his book into one of great profit for all.

The warning of what one could expect from *Logic for the Millions* comes in the initial rule set down by the author. "The first essential to clear thinking (and speaking) is the ability to 'see' the point—to recognize what exactly is the point in question—and then to stick to that point until it has been dealt with." Certainly this is a basic rule and a prime

principle to good clear writing, accurate thinking, and successful speaking. It corresponds to setting up an aim and proposition in sermon writing. The only difficulty is that such a principle will be the effect of a good course in logic and cannot be set down as something with which the pupil immediately begins. Perhaps Dr. Mander had in mind "quick wit" or *solertia* which Aristotle explains in the concluding chapter of the first book of the *Posterior Analytics*.

Considered from the point of view of popularization, *Logic for the Millions* has achieved success. The style is light. Technical terminology has been skillfully avoided. The weakness of the book lies in the fact that the author has not adhered to his subject but has violated his own rules by wandering in and out of logic, both *docens* and *utens*, by exposing his ideas of the psychology involved in reasoning, and at times by going into epistemology. Had he defined logic, remained faithful to his matter, eliminated his thrusts at the supernatural, his book might have hit the mark. As it stands one might well apply one of Dr. Mander's own rules on "unfinished Terms." These are terms that need further explanation in order to make clear precisely what they mean. The book bears the title, *Logic for the Millions*. Of what, we might ask.

The book concludes with an appendix on causation and determinacy. The ultimate conclusion of the author is the only one possible in keeping with his mode of reasoning and procedure. He says in effect that, whatever the explanation of Man, the Universe, Life, and Evolution if we keep plugging away at it we shall finally attain some "'explanation' of it all."

Dr. Raymond J. McCall has less ambitious ideas than Dr. A. E. Mander about the number of readers that his book will reach. He has written a volume on the fundamental principles of formal deductive reasoning and entitled it *Basic Logic*. In his preface he informs the reader that "the present work is intended to form the basis of an introductory course of one semester in logic." Dr. McCall is a professor in the department of philosophy at St. John's University, Brooklyn, and as an experienced teacher can offer his book without apology.

Frankly based on the classic volume of Jacques Maritain's *An Introduction to Logic*, Dr. McCall sets forth the traditional doctrine of Aristotle and St. Thomas on what is now called "formal logic." A brief but enlightening Preface points out the source of current confusion in the field of logic, namely, the unhappy blending of material and formal logic by Christian Wolff and his futile attempt, in following Leibniz, to reduce the genera of logic to mathematical classes.

In his Introduction, Dr. McCall proceeds as a true logician. He defines his terms and gives the background, nature, and further distinctions concerning logic which alone can make the subject clear to the reader or pupil. The book itself has three main divisions: Simple Apprehension and Term;

Judgment and Proposition; Deduction and the Syllogism. In each instance, the treatment is orderly, concise, and accurate. The author inserts any necessary information on the psychological process of ratiocination that is absolutely needed for understanding the text. Beyond this he does not go. Dr. McCall has set up the end in view of his writing and never loses sight of it.

Dr. McCall makes a clear-cut distinction between natural logic and acquired or scientific logic. "If we would think philosophically, we must first become proficient logicians" (p. 3.) Having stressed the importance of his subject, he definitely limits the field of operation for this book. It is concerned with the most elementary and basic division of logic, that is, formal deductive logic. The difference between induction and deduction is explained; and with a comparative study between the mental act and its verbal expression, Dr. McCall is ready to proceed into the text proper. In thus composing his introduction he has followed the time honored principle and practice of the Scholastic, namely: in one's introduction make the reader benevolent by showing the utility of the subject; make him docile by exposing the order and distinction of the science; and make him attentive by attesting to the difficult of the tract.

The body of the book is a superb handling of the subject-matter under consideration. Dr. McCall has written one of the best college text books on formal logic in English. He maintains interest throughout the contents of his volume by supplying original examples and even at times successfully using dashes of wit. The judicious use of carefully worked out schemas or the clear reproduction of traditional ones, makes his book most appealing. His treatment of the various types of propositions and a neat digression (taken from Maritain's observations) on the value of Euler's circles as diagrams for explaining predication add much to the book. Although an index is lacking, this can easily be supplied in later editions. The volume concludes with helpful exercises in logic. These will serve to make the student aware of how much or how little he has comprehended of the section read. All in all *Basic Logic* is an unique achievement in text books for logic.

Yet one would be false to the true Thomistic teaching to allow praise so great a range as to exclude some friendly criticism. Further, it is evident from Dr. McCall's preface that he is a genuine student of philosophy and desirous of a correct presentation of his subject matter. In composing his text book, the author has adhered to the rather unhappy distinction of logic into formal and material. This system has been perpetuated by the manualists, if not invented by them. According to this perversion of Aristotle, Formal Logic sets out to consider the three acts of the mind, that is, simple apprehension, judgment, and reasoning. Had the interpreters of Aristotle preserved his doctrine intact, Formal Logic would

include all of the Organon except the *Topics* and the book on *Sophistical Refutations*. Instead, these pedagogical experts managed to strip logic of the *Categories* and the *Posterior Analytics*, at the latter of which all logic is aimed, while they inserted too many notions from psychology for student minds not yet ready to receive them.

Into Material or Major Logic were tossed the *Categories* and the *Posterior Analytics*. Since colleges never seem to get beyond introducing the student to logic, Catholic seats of learning and those others that still follow Aristotle turn out philosophers who never see any of the working principles for a demonstrative argument. Hence the sterility of minds trained in the once dauntless system of Aristotle and St. Thomas. We have here one of the fundamental causes for the disdain with which the traditional logic is regarded. Those trained in the ancient discipline do not appreciate it, since they have not really seen it. Moderns reject it without considering it or else misuse it. Both would be justified if the philosophy of Aristotle and its later development had no application to life. A system of thought that is impractical has no more value than a stove which does not cook food.

The over-emphasis given to Formal Logic, or more precisely that part of Aristotle's logic treated in the *Prior Analytics*, has made the Stagirite's system seem like nothing more than a book of mental exercises. It should be treated, one concludes, as arithmatic and has worth to the college student only as a way to get credits. As far as its use goes, probably the only thing the pupil retains is that one of the modes of the syllogism is called " Barbara."

Yet the fact of the matter is that this division of logic, whatever may have been the good intentions of its originators, is contrary to the Thomistic tradition. Perhaps if more students of this system obtained their information from direct sources the fact would be shockingly evident. St. Thomas' mind on the subject can be found in the first lecture of his commentary on Aristotle's *Perihermenias*. After pointing out that logic, as the rational science, deals with those things which pertain to the three operations of reason, he continues: " Of those therefore which pertain to the first operation of the intellect, that is, of those which are conceived by simple understanding, Aristotle determines in the book of the *Predicaments*. . . . And hence according to the mentioned order of the three operations, the book of the *Predicaments* is ordered to the book of *Perihermenias*, which is ordered to the *Prior Analytics* and the following." St. Thomas repeats this opinion in the opening lecture of his commentary on the *Posterior Analytics*. Cardinal Cajetan was also of the same mind and emphatically so. He writes in the Prologue to his commentary on Aristotle's *Categories*: " The order of this work among other logical ones is that there ought to be given to it first place absolutely. . . ." Finally,

there can be advanced the testimony of John of St. Thomas in his work entitled *Questiones Disputandae.* This famous commentator advances many arguments in favor of the order proposed by Aristotle. However, they would be too long to quote here.

Just one example of the lack of logic in the present method of teaching the discipline will be cited. In Formal Logic the student is taught the opposition of propositions which necessarily includes notions on contrariety and contradiction. If the pupil has difficulty on this point in logic, and he does, cannot the fault be traced to the fact that this topic of opposition is treated in the *Categories* which, under the present system, will not be touched until Material Logic is reached, if it is reached? With no moorings to cling to, the doctrine of opposition of propositions is a pure memory task. Actually it should reënforce the material learned from the *Categories.*

All this is unfortunate enough, but there also exists the most amazing confusion between logic and psychology that one could imagine possible. This is clear to anyone who has checked manuals written in the last fifty years. Half the time one wonders what the authors considered to be the formal object of logic since they wander, as does A. E. Mander, from logic to psychology to epistemology and back occasionally to logic to begin the cycle anew. Such divergence from the Thomistic teaching can also prove embarrassing. When one considers that men, who do not profess explicit allegiance to the Angelic Doctor but are recognized as genuine Aristotelians, maintain the distinction between logic and the other branches of philosophy, he may begin to wonder whether St. Thomas did not himself change Aristotle. Morris Cohen and Ernest Nagel in their *An Introduction to Logic and Scientific Method* mince no words in making evident their position. Repeatedly they deny any identification of logic with psychology. Those who would remain faithful to the Aristotelian-Thomistic logic in this regard could profit much by their example.

The way to teach logic then is to return to the *Organon* of Aristotle. The Greek was a good teacher. Attempts to improve on his mode of procedure have resulted in the sad state of affairs in which we now see his logic—frowned upon, considered an heirloom of Medieval Scholasticism. Following the leadership of Aristotle, logic should be taught in this way: first there would be a treatment based on the *Categories.* Cajetan maintains in his commentary on this book that its doctrine is not only necessary to logic as a part of it, but also that without it the other sciences and doctrines cannot be explained. Next would come the *Perihermenias* and the *Prior Analytics.* Dr. McCall's excellent volume would supply very well here. Having come this far, the next item, and let it be always emphasized, would be the whole purpose of logic, namely, the *Posterior Analytics.* This is the doctrine proper on demonstration. Finally, by way

of completion, would be considered the *Topics* which is concerned mainly with Dialectics, and lastly the work on *Sophistical Refutations*. For the latter two, Dr. Mander's book would afford some valuable matter and serve ultimately as a model for a book that would put rationality into this irrational and irreverent age. In this way, logic will regain its old vitality and become a real force in shaping the world. Logic will thus help to lead man to the Logos Who is the beginning and the end.

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Lions under the Throne. By CHARLES P. CURTIS, JR. Boston. Houghton Mifflin Company, 1947. Pp. 377, with index. $3.50.

When the Constitution of the United States created three co-ordinate branches of government, it expected one of them, the judiciary, to occupy the position of guardians of the law: lions, but lions under the throne. This is the thesis advanced by Charles P. Curtis, Jr., in a volume which takes its title from Francis Bacon's " Essay on Judicature." An explanation of the title, badly needed by the sorely tried reader, is given on page 165. On page 233 the whole legal philosophy of Mr. Curtis is presented in two sentences. Both of these pages deserve specific mention, because they contain words of clarity shining by contrast with vast stretches of the remainder of the book.

Since its appearance in the spring, Curtis' book has been generally hailed as a real achievement, a valuable study of the Supreme Court. This, in fact, is what its sub-title claims that it is. It is almost impossible to understand how any reviewer, no matter how superficially familiar with the achievements or the history of the Court, could give an unqualifiedly favorable judgment on a book as crowded with grave defects as this is. There are errors of fact and errors of inference; strange and unintelligible grammatical expressions are used; arguments are advanced on both sides of questions, and there is no evidence that the author realizes his inconsistency, or would attempt to resolve it if he did become aware of it. It should be plain that the volume is inaccurate, inadequate, and to a great extent pernicious. Its worthier features, however, should be mentioned before a detailed consideration of less worthy ones is undertaken.

There are occasions on which quick references need to be made to the factual background of certain leading cases decided by the Supreme Court. For those occasions, *Lions under the Throne* contain short and usually accurate summaries of this kind of material; they should prove serviceable

for occasions on which extensive research into case histories is not essential. For the period before the Civil War, there is very little discussion of cases, largely because Curtis' purpose is to show how the Court has changed its interpretations since 1865. Following that date, however, and employing much the same procedure as that which might be used for a series of informal lectures on subjects connected with the Constitution, he explores the hundred or more decisions which he believes are particularly significant. For his examination of pertinent facts behind the decisions, for his listing of biographical details concerning the Justices who have occupied positions on the Court during the last quarter-century, and for his inclusion of the Constitution of the United States as an appendix to his study, Mr. Curtis is to be congratulated. No other features of his book contain so much merit, and it is particularly to be noted that his flippant manner in the preface, bibliography, and notes lessens considerably the value of each.

Curtis treats the whole post-Civil War history of the Court as does a guide touring the Supreme Court building. Any visitor to Washington is expected to view this building, and to tour its halls and apartments under the care of a guide who points out special features of each part of the premises. His stories are fascinatingly colorful; one succeeds the other so rapidly that the visitor is either enthralled or stupefied, according to his temperament. Questions asked by his fellow tourists are most accommodatingly answered, usually with a wealth of additional biographical or historical material. The visitor is usually well satisfied—unless he returns for a second or a third visit. Then he finds the same procedure repeated in the same manner and with the same details—but these are not always applied to the same persons or places. The guides are so accommodating that they will apply the anecdotes wherever they believe their audience will find them most appealing. Curtis treats the Court in this manner; it seems never to matter to him that he has just applied to one case or one Justice a remark for which he now has a new application. He refers slightingly to the seductiveness of the cliché, but he uses it wherever it suits him, and whatever it is.

The comparison between Curtis and a guide to the Supreme Court building is ineluctable. Both really deal with non-essentials; in both, there is the same mingling of important facts with irrelevant details, the same almost desperate effort to breathe life into what each obviously conceives as a dry-as-dust legal atmosphere. Perhaps the only corrective to this attitude can be applied by the Court itself, which is surely badly served by such bungling, self-appointed apologists as Curtis. What is added to a discussion of the Schechter case, for example, by saying that Mr. Justice Stone looked pleased as the Court assembled, perhaps because of the cherry blossoms outside? There is certainly no new light thrown on the decision by this remark, but a great deal is cast upon Curtis' knowledge

of botanical phenomena. On the date given, there could have been no cherry blossoms anywhere in Washington, and particularly not around the court. Again we read that Mrs. Hughes appeared in the courtroom on 12 April 1937. Only the bare statement is made, and what significance her presence had, if any, is left to the reader's imagination. In the same way, Curtis remarks that, in the *Jones and Laughlin* case, McReynolds spoke extemporaneously and in a loud voice. Unless he makes this observation for the purpose of showing McReynolds in an unfavorable light, a quite logical inference, there is again no reason that Curtis might not better have allowed the Supreme Court guides to do their own work.

The fact, however, that he adopts this attitude is indicative of a fault which goes much deeper than superficiality of treatment. Throughout his study, Curtis seems to have a real contempt for his reader, and this merely because he is a reader. It is as though the author descended from his own Olympian heights to explain matters of great importance to small, ill-educated minds, for whom he must couch his wisdom in simplified concepts, appealing by their simplicity and color to assumed juvenility.

All of these features are sufficiently deplorable in a purportedly serious study of an institution like the Supreme Court; even more objectionable is the attitude underlying such an approach. While occasionally the author gives evidence of really sound judgment, as when he remarks that: " You do not have to be a lawyer to recognize the necessity of having a sound and independent system of courts and justices," (Page 290) his meaning is far from being lucid and irrefutable. What Curtis means by a sound and independent system would not secure universal agreement. No Justice is really sound and independent, he contends, if his thinking is conceptual (here one might confusedly inquire what else it could be), and for this reason he declares that only Holmes had a true understanding of the Court's function.

Marshall, to give just one example of Curtis' thought, was far from being sound and independent. To prove his contention that Marshall was far from being the able jurist he is generally considered, the author examines the famous decision in the case of *M'Culloch v. Maryland*. He asserts that Marshall deliberately ignored the provision of the Maryland law which declared that state banks were to be taxed as well as national banks, and that Marshall's decision, which came to be the controlling one in the whole field of national taxation, was dictated purely by his concept of what ought to be the relation of national and state governments.

Putting aside the surely debatable question of Marshall's right to proceed in this manner, we may inquire into the concept which dominates Curtis' mind. His description of the Maryland statute is exceedingly inaccurate, and his account of the decision is therefore grossly unfair to Marshall. The Maryland law in question provided that all banks *not chartered by*

the state be taxed; obviously there was only one such bank, that instrumentality of the national government whose constitutional existence Marshall upheld. It would seem that the Maryland statute was one of the earliest examples of classification: *viz.*, that legal device of artificially grouping corporate entities in a state for the purpose of taxation or other legislative action. But Mr. Curtis' apparent ignorance of this basic principle of jurisprudence called classification is far less disconcerting than his approbation of a deliberate distortion of the Chief Justice's words.

After explaining what he conceives to be Marshall's false position in this tax case, Curtis quotes the eminent Chief Justice's words to the effect that " the power to tax involves the power to destroy " (Page 206.) Two pages later he reproduces a portion of a Holmes opinion in which the latter declares that Marshall said the taxing power *is* the power to destroy. Curtis not only does not correct Holmes's very serious distortion of Marshall's words, he makes them the foundation of his own attack upon the whole approach of the Court to the matter of taxation. Nothing could be more illustrative of the methods used by Curtis and Holmes, nor of the validity of many of their conclusions.

Another legal concept which seems to be beyond Curtis' understanding is that by which the Court has declared that it alone can determine the question of separability: *viz.*, that property of a statute which makes its parts susceptible of separate consideration and separable constitutionality. Curtis fails to see that, in declaring the invalidity of NRA legislation, the Court did not say that that separability provisions in an act would be ignored upon judicial presentation; on the contrary, the Court declared that it would have to weigh such provisions just as it weighs any other provisions of a statute. If parts of the act are separable when measured against the Constitution, the Court will so declare; otherwise, the whole act stands or falls together. Denial of separability does not necessarily condemn an act; it may operate equally well to sustain it. What is mystifying to any reader here is that Curtis would allow Congress to be the sole judge of the validity of any other type or portion of legislation. Here again there is evidence of his desire to have satisfaction both ways, just as long as it is he who is satisfied.

He exemplifies this tendency when he refers (pages 114-115) to Hughes as " the wisest of our elder statesmen," and charges by innuendo (pages 126-7) that Hughes joined the majority in the *Butler* case simply to avoid another 5-4 decision. Either his opinion of elder statesmen is so poor that he sees nothing incompatible between his characterization and Hughes' action, or his opinion of Hughes suffered a marked diminution within a few pages. There is always the strong probability, of course, that Hughes actually voted with the majority because he agreed with it on principle. Mr. Curtis condemns principles out-of-hand.

It is this objection of the use of any principle or set of principles which makes Mr. Curtis' book so dangerous, and so bewildering. Not even in his own words, that the Court used the "right objection for the wrong reason," can he be justified. His book, rather, is a series of objections, often badly chosen, for no reason at all, for pure caprice. Case after case is cited, and condemned, for no other reason than that Mr. Curtis feels that it is bad. Since he dislikes principles so wholeheartedly, is it possible to find some one standard on which he bases his position? There is such a standard, but it takes assiduous search to discover it, and when discovered, it is found to be tantalizingly amorphous.

On the first page of his study, the author remarks that "Continuity with the past is a necessity, but, as Holmes said, not a duty." This is as logical as saying that a heart is its beats; for whom is continuity a necessity, if for no one it is a duty? Evidently Curtis does not really mean this, for he says (page 17), "If the Court cannot help but choose, it must prefer the Constitution." The Court, then, has a duty to perform, a consideration of legislation with some standard of the past. This must be the Constitution—but only, says Curtis, when no other standard can be used. What sort of argument is this, and how meanly does it beg the question of what the Court has sworn and been empowered to do?

Clearer light is cast on Mr. Curtis' views by his statement (page 21): "A statute when it is enacted is only a project. Until it is put into operation, who knows how it will work?" Who, indeed, but does inability to prophesy concerning the efficiency of its operation justify anyone in continuing: "Not until then is it itself, an operation which can be observed and appraised." It is a temptation too strong to be resisted to say that, by Mr. Curtis' statement, the Supreme Court offered him no material for observation during the recesses when decisions are written. Only when the Court speaks is it the Court; only when Curtis writes on the Court is he a person competent to write on the Court. But the last half of that observation is too obviously false to need further consideration.

It would be strange, in any ordinarily scholarly work on constitutional law, to find a statement that this is really not law at all. Yet Curtis blithely tosses off such a remark (page 56), in a sort of parenthesis to his discussion of *stare decisis*. After more than a hundred pages devoted to sentiments of this description, Curtis finally brings out into the open the man whose legal philosophy, if such it may be called with propriety, has influenced him. This is Mr. Justice Holmes, whose laughter would have rung from the skies, we are told, if he had heard Roberts' opinion that "The motive of Congress is irrelevant to the validity of the legislation." Curtis himself enjoys tremendously the exquisite ridiculousness of considering a statute by any other standard than that of expediency; on this occasion he thinks that only the motive of Congress should be

considered. There are other occasions where Congress requires a searching investigation of its motives, and needs to be treated with suspicion of an extreme kind. How is one to determine which it should be in a given instance? By consulting popular demand or even better, by examining Curtis' views on popular demand.

Finally, tired of obscuring his thesis with vague expressions, Curtis openly declares (page 233), "So the question is, Is your abstraction useful? Does it get you anywhere you can stand on? Does the result make sense? . . . John Dewey has given us the philosophy that we should adopt here." Thirty pages farther into this theme, he quotes Holmes with approval as having stated that the best test of truth is its power to get accepted. If the reception accorded this book is any criterion, then it is surely a true book in every sense of the word. One cannot help noticing, however, that the means by which Curtis arrives at his statements is the very one he criticizes so severely in others. He assumes as correct a standard by which he seeks to measure all Court activity. The conceptualism he decries is one he must assume, even though in inverted fashion, before he can arrive at the conclusions he advances.

This conceptualism, in turn, since it is based on Holmes' theories of sociological jurisprudence, enables him to apotheosize Holmes, and to say of his dissent in *Meyers v. Nebraska* that it is "the necessary approach to the whole of our immense problem." It is a mere detail that Holmes' dissent emphasizes the alleged right of a State to ignore the rights of parents over the education of their children, and that this attitude is praised in almost the same breath which finds Curtis extolling Holmes' advocacy of individual rights. Consistency matters not at all, providing only Holmes is upheld as the champion of the democratic process.

To exemplify the conclusions he comes to concerning this process, he formulates two rules for the Court: "Where the democratic process is not working, and the statute in question is not its result, the Court is free to make up its own mind without the exercise of any self-restraint"; (page 327) ". . . where the democratic process is itself attacked, the Court should exercise less than no restraint." (page 328) To make his meaning crystalline, he concludes: "The function of the Court, then, includes philosophy as well as law and statesmanship. Not, you will understand, the practice of metaphysics—the more sparingly they do that the better—but the function which Whitehead gave philosophy. 'I hold,' he said, 'that philosophy is the critic of abstraction.'"

Both Whitehead and Curtis convict themselves out of their own mouths, for how can one assume the position of critic without first finding and fixing the position? The Court, if it followed Curtis' views, would always abandon any hope of discovering immutable laws above those made by human legislatures; it would abolish its belief in fundamental human

rights; it would measure statutes only by the state of public need—but no matter what Curtis does, he cannot make the Court do anything but measure and weigh. The remorseless weight of every human legal system is far too great for Curtis' strength to overturn, and even as he concludes his argument for no standards he must admit that standards are necessary.

The sub-title of his study, then, ought to appear with quotation marks around it. It is an inchoate, incoherent, inaccurate mass of facts, errors, opinions, surmises, and prejudices. Holmes' mantle has surely not fallen on Curtis' shoulders, despite the latter's idolatry of Holmes, for the Justice could never have been guilty of such supreme contempt of his readers as would have allowed him to perpetrate such solecisms as these. "Being a lawyer myself, you must allow me to cite authority. (Page 2) "The fact is, when we come upon an ambiguity, we must take it to be deliberate. Of course it may have been negligent." (Page 3) "The judicial process is a part of the operation by which the law is fitted into the rest of law." (Page 7) "Who drives fat oxen must themselves be fat." (Page 53) ". . . so long as that spirit could keep its feet." (Page 153) ". . . it was needless and therefore futile. If it had not been, it would have been necessary." (Page 185) He destroys a clever argument on the texture of decisions by a confused analogy of the opinions which are included in the decisions with isomers, which Webster could tell him are not mixtures, but compounds.

In the last analysis, perhaps no one could summarize more neatly than the really distinguished constitutional historian, Andrew Cunningham McLaughlin, the pitiful position into which Curtis, long engaged in public and semi-public functions, has placed himself by publishing this book: "Men occupying the position of statesmen were free from the encumbrance of information concerning elementary principles of law and order."

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The Theory of Human Culture. By James Feibleman. New York: Duell, Sloan and Pearce, 1946. Pp. 368, with index. $5.00.

"This book marks the attempt to establish the principles of sociology, understood as the science of culture, by employing ontology as an instrument of analysis and discovery." (p. xiii) The sociologist may be pleased or vexed to have his science defined as that of culture; he should look with favor on any attempt to point out the ontological bases of sociology. There is undoubtedly too little consideration given to the metaphysical roots of

the subject of sociology in the maze of statistics and other experimental data in modern sociological studies. This is not to deny the solid contributions of even some heterodox sociologists, but only to insist that sociological hypotheses based on experimental findings only, without regard for the ontological bases, lack scientific stability.

Dr. Feibleman, however, in seeking to establish sociology as a science, is impressed with the instrumental rather than ultimate character of ontology. For him, "the ideal condition of knowledge . . . is knowledge cast in the form of mathematical knowledge; equations and text." (p. 345) Metaphysics operates toward that objective in providing the categories and general propositions effective of the organization of the field necessary antecedently to its mathematization. Hence, the logical function rather than the ontal status of the subject matters of metaphysics receives the greater emphasis. This is consonant with Dr. Feibleman's own ontology. Eschewing the panrelativism of Dewey and asserting the need of absolutes, he affirms relations themselves as "fixed functions," "rates of change," the "invariant between variables." (pp. 333, 348) The familiar naturalistic reliance upon the "method of science" yields the equally familiar location of metaphysics as hypotheses or "posulate-sets" within the theoretical phase of that method. (p. 335)

It is in this latter sense that Dr. Feibleman employs ontology as "an instrument of analysis and discovery." The study of culture properly begins with the study of the individual since culture embraces a certain area which includes man and his world. The principles of interaction and continuity, celebrated in instrumentalist circles, allow at once of isolation of the individualistic elements and transition to the wider ranges of the cosmic and social. Human nature is defined in terms of the drives toward feeding, breeding, and inquiry, and the empirical levels of the physical, chemical, biological, psychological and social, upon the pertinence of which Dr. J. H. Randall, Jr. has recently cast doubt, are discriminated. Each drive and each level is possessed of its own conditions of origin, being and sustaining which might be described as its proper ontology, conscious and unconscious (a doctrine which renders the term itself at least ambiguous.) On the social level particularly may be discerned that "subconsciously accepted belief of the majority of the members of a social group respecting the ultimate nature of reality" which is denominated "the implicit dominant ontology." (p. 75) By its means the culture of a period or a people is organized and integrated. Viewed as a logical hypothesis it should provide a key to analysis, a ground for criticism, a pole, initial and terminal, for change, and, of gravest import, a basis for measurement. (p. 347)

Dr. Feibleman's implicit and explicit dominant ontology enforces the limitations of his contribution. He adopts the behavioristic inversion of

the relationship between thought and language and corroborates it only with the usual analogies between animal and human behavior. "The extent to which the individual is a social product is indeed astonishing. The human individual would not be human were it not for the social *milieu* . . . Association with others makes language and consequently abstract thought and other cultural achievements possible, and these in turn make the animal individual into the human individual." (p. 6) Insistence upon individual and social development in this subjective-objective view of the dual nature of man gives an aura of fashionable existentialism and precludes the discernment of finality and subordination in nature. The most that can be hoped for, and all that Dr. Feibleman envisages, is the establishment of coordinates mathematically expressed (p. 349) The attainment of this objective is, in turn, dependent upon an assumed determinism excluding free will in man.

The "implicit dominant ontology," perhaps precisely as implicit, is the attitude to reality, whether of a smooth muscle or of a society, taken in its bare and uncolored sense. To this, on the level of society, is added the ethos or quality which colors the subjective view of reality. Where the ontology is the extensity, the ethos is the intensity of the cultural integration. (pp. 48-66, 346) Not only is the parity of feeling and reasoning maintained, (p. 22) but the ultimacy of human motivation is emphatically asserted. (p. 334) Voluntarism is hence an overt rather than submerged trait of Dr. Feibleman's thought. (Dr. Dewey's instrumentalism maintains a specious intellectualism in avoiding for the most part explicitation of this aspect.) Under the circumstances, the expression of ontology and ethos is aptly named "myth." The juxtaposition of determinism and voluntarism has ever afforded an interesting project in reconciliation. Dr. Feibleman essays the task with a distinction between "the logical order of being or possibility and the historical order of existence or actuality." (pp. xii, 22) The tychism resurrected by Peirce provides nomenclature if not explanation for the contingency of the latter, whereas the former gives ground to the effort toward quantification. Together they restrain Dr. Feibleman, except for the imaginative construction of hypothetical generalizations, to the empirical data of positivistic science.

In organizing the mass of empirical detail that the various "social sciences" have unearthed in the past century, Dr. Feibleman's use of ontology even as a logical device provides illuminating observations and interesting analogies. A similar procedure was followed by Dr. Northrup in his popular *The Meeting of East and West.* Some shrewd analyses mark the studies of the Baiga culture, aspects of the Chinese and Muslim civilizations, and the continuity of the culture of the United States. The effect of the diverse reactions to Hume's skepticism by continental Europe

and by England was also noted by Dr. Northrup. In this part of the study, Dr. Feibleman divides types of culture into seven classes, four of which are classified as "early" and three as "advanced." The most advanced is the "ultra-scientific." The religious is the highest of the early stages while the atheistic is the lowest of the advanced. Inasmuch as Dr. Feibleman recognizes the ontological implications of the notion of deity as a cosmic viewpoint, (p. 74) his acceptance of atheism as an advance over theism may seem curious; particularly, since he asserts "the highest function of society is performed by religion." (p. 101)

Explanation can be found in the fundamental agreement of Dr. Feibleman's teaching with that of Professors Sterling Lamprecht and Sidney Hook, differing from them, as they from each other, only in the language adopted. Dr. Lamprecht, abstracting from the etymology of the term, accepts theology as an integrated world view. Dr. Hook forthrightly denies God as an unproven existence and decries the assumption of the name as denotative of any reality susceptible of other and more pertinent description. Dr. Feibleman negates a "science of theology" as impossible because "the view from outside the whole of being which would be necessary in order to analyze being as a whole" (p. 101) is impossible. His reason is that given by Dr. Hook as frustrating the whole enterprise of "metaphysics" and a summation of Dr. Lamprecht's rejection of the proofs for the existence of a transcendent God. Yet each exalts religion (as a feeling, not an institution) in paying reverence to the cosmic forces which sustain human activity. From the enthronement of the goddess of reason upon the altar of Notre Dame through the "religion of science" of Comte, naturalism, even of the "new" variety, cannot forbear to culminate in a theology nor foreswear the religious instinct of man. The linguistic variations are nevertheless confusing to the unwary reader.

In common with many twentieth century thinkers Dr. Feibleman orientates his contribution about the focus of value. In the tradition of Scheler, Husserl, Aloys Müller and, particularly, Nicholai Hartmann, he maintains the objective validity of universals and values "independent of minds and other actual things." (pp. xii, 298) The Platonic character of this type of extreme objectivism has been frequently cited; that its contemporary appearance is symptomatic of increasing awareness of the inadequacy of the naturalistic account of the cosmos has not been so often noted. Axiologic realism, in Dr. Feibleman's hands, becomes a compromise between a philosophy of Being and one of Becoming. It fails in so far as it assigns to the former a status of possibility rather than actuality and hence confuses both logic and metaphysics with dialectics. (pp. 22, 332 ff.) The step to an ultimate grounding of reality in actuality, made by Plato, Augustine and Berkeley, is prohibited Dr. Feibleman by his naturalism and relativism. The actualization of Being becomes eventual. (p. 340)

The manifestation of considerable insight into the sources of current philosophic frustration together with acceptance of the teachings which perpetuate that dissipation of speculative power give to *The Theory of Human Culture* an appearance of unreconciled electicism. The implications attendant upon the recognition of the reality of essence are left undeveloped; the consequences radicated in essential as distinguished from accidental differentiation are denied; the contrived universals produced by dialectical concern with the contingent are given parity with, if not superiority over, the necessary natures reality reveals. The familiar theses of naturalism are rendered inevitable: the denial of a transcendent, personal God, and of the spirituality of the soul, the affirmation of the self-sufficiency of nature, the exclusive reliance upon the "method of science." Yet, Dr. Feibleman perceives that the organic whole is more than the sum of its parts (p. 4), that the historicist is an incomplete account of the nature of things (p. 9), that change is not to be explained by change (p. 334). More strange, perhaps, is his equalization of inquiry with the processes of digestion and generation, a favorite reduction of the behaviorists and instrumentalists, while rejecting the attainment of control as the sole function of thought. (p. 327)

In terms of Aristotelianism, the book is characterized by continuous reaching toward the speculative science of the Stagirite's "First Philosophy," the while blocking every avenue to true metaphysics that reason discloses. In terms of Thomism, the profession of belief in truths and values which constitute an order of being independent of mundane actuality and experience and in principles eternal and immutable beyond the conditions of change (p. 298) are a reaching for God, the while denying Him. The accusation leveled against an outstanding anthropologist is apropos: he contructed metaphors and then proceeded as though the metaphors were realities. *The Theory of Human Culture* is a study of reality as seen through dialectic metaphor and its principal fault is that it never returns from the metaphor.

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Theology and Sanity. By F. J. Sheed. New York: Sheed & Ward, 1946. Pp. 417, with index. $3.00.

In his introduction to "A History of Science" Sir William Dampier says that "if we are to see life steadily and see it whole we need not only science . . . we need the apprehension of a sacred mystery." To tell us about the realities of this sacred mystery Mr. Sheed has written a book,

a fascinating, desperately-needed book about reality from the standpoint of Catholic faith. It is his contention that " sanity means living mentally in the real world "; for this one must know, if not in full detail, at least the minimum of truths which make up the essential outline of that reality. It is plain to him as it must be to us that one who pilots a plane by the aid of an automobile map only, just does not possess the sufficient knowledge and data of the earth that he needs for such a task. Given the ordinary circumstances of flying, involving awareness of cubic as well as surface measurements, he must fail and be lost. The barest minimum of truth must include a core of theology, for some of the reality of the real world is knowable only by revelation. Mr. Sheed's concern is for the intellect not the will, as he says, he is concerned " not with sanctity but with sanity." Knowledge is the work of the intellect; to give that mimimum of knowledge for living mentally in the real world, this book is dedicated.

Any priest who teaches adults or near-adults Catholic philosophy or Catholic theology quickly becomes aware of the totally inadequate notions that are his students' summary of the matters of Catholic faith. All too often he finds it difficult for them to recollect even the simple catechism formula which they have learned in their childhood and which is pertinent and applicable to the occasion of his query and their answer. It becomes evident that there is a tremendous hiatus of mental development relative to the things of faith. Much of what they learned was, to a great extent, a memory task; any meaning value was necessarily restricted by circumstances of age and the dominance of the imagination. Truly the faith deals with mystery but there seems to have been little more than a futile attempt on the part of the child to conjure up some phantasm to cover the mystery. Because of the sheer inadequacy of the image, the child shrugged off the whole field of religious truth, walled off and sealed his mind against any further consideration, satisfied for the time being that these were, after all, matters of religion and the world held so many things much more attractive and satisfactory from the point of view of that powerful and useful and interesting faculty, his imagination.

This state of mind is likely to endure and become more marked with the increase of age and education. An integration of knowledge derived from the positive and natural spheres makes its appearance unsupported by the necessary higher integration that should flow from the fields of religion and theology. Too often there arises a spurious conflict which would never arise had mental development in the realm of theology kept pace with the natural disciplines. The result is a form of spiritual malnutrition; external observance of religious practices makes up the religious life of many people. Spiritual activity is often looked upon as a chore, dictated by the remnants of childhood habit and custom rather than inspired and enlivened by a keen appreciation and evaluation that should characterize

the vigorous life of theologically informed and theologically developed minds.

Unless we are to consider the prodigious concern and the incalculable labor of the Church in her Councils and in the formulation of her dogmatic decrees just an empty exercise devoid of any purpose, we must conclude that the Church understands that mental development is an inherent tendency in humanity, nd that she must provide the proper intellectual food, the presentation of divine truth for the nourishment, support, and direction of man's mind. She knows that unless we see, to the best of our ability, the universe as she sees it, we run the risk of not seeing it at all, or at best, "c having not so much Catholic minds as worldly minds with Catholic patches."

How much the defection from Catholic faith can be attributed to the sheer ignorance of its doctrine arising from total or only partial unawareness and misunderstanding, only God can know. Yet, theology is the due inheritance of all the children of the Church, not only in their infant and childhood years but throughout the unfolding and developing of their lives. It is their right and their desperate need if sanity is to prevail.

It is the maturing mind that will particularly benefit from Mr. Sheed's book. Relying almost exclusivel upon the principal "loci theologici," Sacred Scripture and the dogmatic definitions of the Church, he coordinates the essential truths of the Catholic Faith under the three-fold heading of God, Creation, Oneself. The exposition of Dogma and Moral is very simply unified, yet Mr. Sheed's treatment of detail is exquisite. He teaches but does not fatigue. He makes no promises of explaining away mystery, or of freeing the reader from any mental effort, but he does very emphatically help the willing reader to see more clearly the light and beauty and the wonder of the revelation of God.

This reviewer was especially impressed by the first two sections. It seems to him that the recession in the third section from the very high standard of the first two parts stems principally from the magnitude of the task undertaken by the author. The very extensiveness of the virtues and gifts of the Holy Ghost is apt to impair the unity and simplicity of exposition and also occasion more opportunities for statements not in keeping with the Thomistic tradition which Mr. Sheed implicitly reveres.

Precisely because of our intense admiration for and express commendation of this work and merely to clarify and not to criticize, a few observations are in order. Defining goodness (p. 100), Mr. Sheed seems to impose some form of creation as absolutely incumbent upon divinity by using the words "spread *outwards*." He infers in an illustration (p. 159) that Adam and Eve by reason of the fall lost their freedom of will, in face of passion; yet he takes pains in the following paragraph to assert that freedom. He says that "with Faith there enters the soul the whole of our supernatural

equipment . . ." (p. 355), rather than with sanctifying grace. He places Temperance and Fortitude (p. 360) in the will rather than in the concupiscible and irascible appetites. In discussing law (p. 369), it becomes a matter of will, not reason, and generally throughout this section there is a looseness of expression implying Voluntarism though the explanations invariably are couched in terms of reason and intellect. There is definite contradiction in countenancing the co-existence of a natural habit of sin with the supernatural habits of grace and virtue in one and the same faculty (p. 394.) Finally, the virtue of chastity (p. 400) is identified with mere physical virginity.

Even with these reservations we most heartily recommend "Theology and Sanity" not only to priests and seminarians but to all who are looking for an illuminating exposition of central Catholic thought above the simple level of the Catechism.

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BRIEF NOTICES

Eve and the Gryphon. By Gerald Vann, O. P. Oxford: Blackfriars Publications, 1946. Pp. 71. 6/—.

The Gryphon is defined as a fabulous creature half lion, half eagle. In these conferences given by Father Vann, O. P. to St. Joan's Alliance, Oxford, on the vocation of woman in the modern world, the inspiration that married women must be to men is brought forth with this underlying current that while " the lips are the lips of a woman, the smile is the smile of Christ." In other words, a woman's vocation as a wife and a mother, is to lead men to Christ. Through prayer and detachment women must learn to love the world in God and desire to serve it. They must fulfill in themselves the vocation of tears for if they have the heart of Christ they will have the compassion of Christ.

Four conferences are contained in this brief but most provocative study. Through St. Catherine of Sienna women can learn of prayer, detachment, and what it means to have the heart of Christ. Through St. Monica they learn the secret of tears and compassion. The Mother of God will tell them of the vocation of Motherhood, and Eve who turned things to herself through selfishness will tell the modern woman that she must turn things to Christ, that her eyes must be fastened on the Gryphon, Christ, Who in loving the world died for it.

No woman, eager to fulfill her role as wife and mother, can read these talks of Father Vann without being moved to the sublimity of her vocation. The lay apostolate will open up to her the necessity of a detachment whereby the more she loves God the more will she love others because the more will she share in God's love of others. False love will be stripped away and in the true love of others, because of the love of God, women will achieve their vocation.

Our contemporary world in seeking the emancipation of women has been led into strange and erroneous interpretations of the role married women must play in life. This book is an exhilarating breath of the role theology plays not with the facts of married life but with the theological principles of marriage. It contains a vital spiritual message and uplift for all married women.

The Meaning of Existence. By Charles Duell Kean. New York: Harper, 1947. Pp. 222, with index. $3.00.

This work, which the author acknowledges to be written in the tradition of Kierkegaard, is an appeal for the reconstruction of the modern world

through a return to the meaning of existence exemplified in the Gospels. The factors in such a reconstruction, according to the author, are on three levels: history, intellect, and existence.

History, where man meets nature and his fellow-men, is taken as it "properly refers to the institutional nature of human affairs." (p. 38) Here man finds himself a servant, formed by fate and responding by necessity. The intellect attempts to transcend history by the categories of memory, anticipation, critical judgment, and creativity. But in the end, the struggle to dominate history only overlays it with intellectual categories that, like Kantian forms, do not meet historical reality on its own level and never resolve historical problems. Hence, the third category, that of existence, comes into play as a bid for peace.

Existence is the mystery of tragedy, anxiety, death, and guilt which, seeks final solution in religion. The essence of religion is faith which, as might be expected from a Kierkegaardian, is related to action by an almost Lutheran link. Ineffable, existence can only be approached by myth—as unhappy a term here as it is in Jaspers to an orthodox reader but consistent with a Kierkegaardian ontology. "Myth," says Kean, "is the description of man's existence in terms of a story related to history but oriented toward eternity." (p. 155) The Christian myth is humanly reconstructive, the author adds, not because it eliminates the sense of tragedy but deepens it by its challenges, questions, oppressions, by its promises of only limited and momentary success.

The chief criticism of this book is its inductive character which extends to the borderland where psychology must be completed by ethics and where original sin, a fact which only a theologian and not an inductive philosopher can explore, begins to make its appearance. Kierkegaard and his existentialist descendants of our day are at one with the discursive scientist in his view of being as inert, when they begin, as they do, with a form of the *cogito* and attempt to think outward, by a type of induction, toward the universal. In such a procedure, of course, the universal and transcendent realities are undiscoverable. If the measure of being and value is the existence of the cogitator, then the ultimates must remain in utter existential darkness and the intellect can enlighten only obliquely and as a myth.

The author, using his inductive approach, seems to conceive of religion psychologically, as satisfying man's needs, instead of as a body of truth to which the intellect assents, however it may be moved. As an intellectual act of assent, faith is not on the same level with guilt, works, and reconstruction but shows the guilt redeemed, the works necessary, and the reconstruction efficacious. The Christian philosopher of history is not Kierkegaard but Augustine.

Het Spiritualistisch Existentialisme van Louis Lavelle. By B. M. I. Delfgaauw. Amsterdam: N. V. Noord-Hollandsche Uitgevers Maatschappij, 1947. Pp. 137, with index.

De J. P. Sarte à L. Lavelle. By Gonzague Truc. Paris: Tissot, 1946. Pp. 220.

The Delfgaauw volume is the first full-dress exposition and criticism of Lavelle's thought to make its appearance. Written by a scholastic, the book is enhanced by a summary, in French, of its contents, Lavelle's statement on the author's criticism, and the correspondence between Lavelle and Delfgaauw on problems which the book raised.

Delfgaauw's opinion, like that of Lavelle's eariler critics, is that a pantheistic universe results from the " univocity " of being. The author's judgment may be challenged in view of Lavelle's constant insistence that God could not give man being without giving him liberty, i. e., independence. The exterior world, a form in which God (le Tout) appears to us, is by its very character of *given-ness* a type of imitation of God rather than God himself.

Lavelle's counter-statement is interesting as a clarification of the terms *existence* and *being*, as used in his present vocabulary, a clarification that is achieved to an even greater extent in Lavelle's most recent book, *L'Introduction à l'Ontologie.*

Truc, writing from the viewpoint of a moralist, has provided a comparative sketch of two of the three leading currents in contemporary French thought. Sartre's world, the product of what the author aptly dubs " mental acrobatics," is presented as a vacuum, dominated by nothing-ness and allowing only of despair. Lavelle's universe is a plenum, where the greatness of man, a participator in God's own interiority, is the seal of his joy and his optimism. The difference between Sartre and Lavelle is the difference between being and nothingness.

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